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ABSTRACT

A symposium was held to discuss the question, How and to what extent is technical and vocational education in Europe encouraging occupational mobility? Following the symposium, a series of visits was conducted to view innovative practices and experiments concerning this question: countries visited included Belgium, Switzerland, the United Kingdom, Italy, Norway, Sweden, and Spain. A questionnaire was completed by each visiting team and then widely distributed in the countries visited so that replies could be prepared for the visit reports. (The text of each country's questionnaire and each reply are included in this report.) Overall the findings were that all the new systems (1) have a common core and grouped training ending with specialization; (2) provide all-round training or at least a balance between general and vocational education; (3) prepare for social integration, some through traditional courses, others more actively; (4) allow for differentiation of length of training, either in the length of training cycles, through options, or through the permeability of the system; and (5) provide for a flexibility which is at least more extensive. In conclusion, questions were raised concerning the lack of originality, the importance of attitudes, and the meaning of "sound" technical and vocational education. (BM)

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EDUCATION & CULTURE

CCC/EGT (77) 31

SOME SIGNIFICANT EXPERIMENTS IN VOCATIONAL TRAINING

(Surveys conducted in 1977)

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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COUNCIL FOR CULTURAL CO-OPERATION
Committee for General and Technical Education

Strasbourg

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SOME SIGNIFICANT EXPERIMENTS IN VOCATIONAL
TRAINING

(Surveys conducted in 1977)

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We wish to thank all those administrators, heads of institutions and teachers who organised these visits, in particular :

M. DUPONT (Belgium)
M. GOY (France)
M. DALESSANDRO (Italy)
Mr. ØVERGAARD, Mr. LØKEN (Norway)
M. MARTINEZ GIJON (Spain)
Mrs. HENRICSON, Mr. ELMGREN (Sweden)
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I N T R O D U C T I O N

I. THE ORIGIN OF THE SURVEY

The aim of the Montreux Symposium (1) was to answer the following question : "How, and what extent, technical and vocational education can encourage occupational mobility" ? This was a delicate question which, in the prevailing climate, elicited a cautious response.

After analysing the concept of mobility in the light of its different components (2) and having distinguished between voluntary and imposed mobility (3), the participants stressed the importance of "sound" initial technical training, making it possible to cope with imposed mobility and to make the most of voluntary mobility.

But what constitutes "sound training" ?

By comparing the conclusions of the various symposia, eg those of the Symposium of Santa Cruz de Tenerife (4) on the objectives of technical and vocational education and those of the Le Touquet Symposium (5) on unit/credit systems, six criteria of sound training could be defined positively as follows :

1. Training on a broad base (families of professions, key-training courses etc) ;
2. "Delayed" specialisation ;
3. Educational value of all-round technical training ;
4. Preparation for social integration ;
5. Differentiation of length of training courses ;
6. Permeability (flexibility) involving guidance and continued training.

All these points have often been enlarged upon, in the work of the Council of Europe and in that of other international organisations.

Having the opportunity to organise a series of visits we considered that it might be of interest to go beyond theoretical reflection to see how these ideas were being applied in practice. We therefore canvassed the responsible authorities and finally received 7 proposals.

II. ORGANISATION

The visits were prepared during 1976 (A) (B). Belgium, Norway, Sweden, Switzerland and the United Kingdom indicated their intention of showing us systems which had been very widely adopted but which were still in competition with old systems, whereas Italy and Spain could show us only isolated, though significant, experiments.

Taking account of affinities and interests, the organisation of visits fell into the following pattern :

Country visited	Origin of visitors	Time of visit
Belgium	Switzerland - France	November 1976
Switzerland	United Kingdom - Italy Belgium (Dutch-speaking)	November 1976
United Kingdom	Sweden - Federal Republic of Germany	November 1976
Italy	Belgium (French-speaking) Council of Europe	February 1977
Norway - Sweden	Luxembourg - Federal Republic of Germany	February 1977
Spain	National contribution	

A questionnaire (C) designed to assist in the survey was produced by the "visitors" and the Secretariat. The questions are listed at the end of this introduction. The questionnaire, widely distributed in the countries visited, enabled those responsible at national level to prepare replies which appear in the visit reports. In April 1977 all the reports were collected. An assessment meeting (D) was held to finalise the texts and secure the agreement of the representatives of the countries visited.

Since then, Spain, which for material reasons had not been able to present its experiments, has provided the attached contribution.

III. FINDINGS

Some general introductory remarks can usefully be made concerning the content of these reports. Their origin has already been described : it was at first a question of finding evidence of the system's influence on mobility. From this point of view the objective was not attained. None of the systems demonstrated had been in existence long enough for any conclusion to be drawn from the detailed quantitative and qualitative indicators listed at the end of the questionnaire.

We are probably faced here with a basic antinomy. Every innovation is based on hypotheses. When it becomes possible to confirm or invalidate these hypotheses, the time for the innovation has passed and the conditions which had given rise to it have changed. The time is long since past when the educational system was a balanced manifestation of a stable economic and social system. Today, hypotheses relating to innovation are wagers on the future rather than steps on the road to proof.

This is illustrated by the surveys described below. They all refer to a situation prevailing at the time of the visits (late 1976, early 1977) and to systems undergoing change.

Thus it is not possible to consider the systems described as permanently established models, nor even to tie one or other system to a specific social project. Hence the blurred impression gained from reading the whole. This impression is further accentuated by the sometimes elliptical nature of the comments, resulting from the fact that the numerous documents appended could not be incorporated.

Despite these shortcomings, it was thought that reproduction of the surveys could assist our work and that their distribution might be of interest to a number of readers ; this is especially true if the suggestion made by the visiting experts at their assessment meeting is accepted, viz. that the experiments described should be revisited in two years' time in order to follow up their development and to identify the determining factors.

Furthermore, these "living experiments", despite their diversity, have certain guiding ideas in common which we shall now describe as they appeared to us.

1.2.1. GROUPING AND CONCENTRATION

All the systems, with slight variations, refer to the concept of grouping and concentration but without explaining it (the replies under 1.2.1 are rather evasive). A simple - even simplistic - idea is that, in order to achieve grouping and concentration, it is sufficient to consider the "natural" classification of existing vocations and to refer to "common sense" and experience.

In such a classification the variants are grouped in branches and the branches into families or main streams (see the Swedish example). These classifications lead to corporative or technological groupings : wood, metal, services etc, but considerably weaken the concept of vocational grouping and concentration. They may also, however, as indicated in the Spanish report, lead to conflicts between two tendencies ; one tending towards regrouping and the other towards subdivision.

In a lecture to the Bad Hofgastein Symposium (6) we attempted to show, on the basis of research findings, that it was possible to define the content of multi-purpose training without reference to the traditional nomenclature. We proposed groupings based on underlying analogies in working methods and characteristics of the material used independently of their perceptual identity.

For example, the training of a textile machine operator has more underlying analogies with that of a paper machine operator than with that of a tailor-dressmaker.

Working with fabric simply constitutes a corporative tie bearing no relation to the content of training.

The work of the "basic training" group (7) opens up another perspective. In its provisional report (D) the Group reaches the following conclusion : "The sound values are not a list of qualifications or carefully defined contents but the competence of the teaching staff, the structure of the institution and the basic features of society".

While in other countries such opposition is often shown by small employers seeking immediately usable labour, the opposition of the left wing in Norway to grouping and concentration may seem surprising. But this position is not so absurd as it might appear : it ties up with the conclusions of the Montreux Symposium where the theory or the necessity of mobility, imposed by industry and facilitated by training, was challenged (see Bibliography, 1 and 2).

1.2.2. ALL-ROUND TRAINING

The questionnaire suggested that it should be ascertained, by counting the number of "academic subjects", whether the experiments were based on a new conception of general education. This would not appear to be the case. Academic tradition and teacher training continue to impose the distinction between general and vocational disciplines.

Nevertheless a slow but perceptible evolution is under way. It is no longer certain today whether general technology or technical drawing (extended to graphic communication) are general or vocational disciplines. Certain technical disciplines, for example, have been reabsorbed by general education under the title "technological education" in the intermediate stage and in the form of options in general secondary education.

But it would be idle to believe that vocational training could derive sustenance from itself and found a culture centred entirely on vocationalism. Hence the space devoted in the questionnaire to team and individual sports, to artistic education and to cultural democratisation in general.

Here again the survey reveals no decisive innovations. We even read that in Belgium the 2 - 4 hours left free for additional optional activities are used in support of vocational training.

More significant is the attention devoted to the education of the future citizen in the systems analysed. The need to train the producer and homo socialis was clearly stated at the Montreux Symposium (1). It is interesting to see how this has been applied in practice. Certain countries have been able to turn civics into something other than a formal discipline.

In this connection may be cited the Italian experiments and the Norwegian reply, which show that preparation for decision-making is one of the major objectives of the training system.

The influence of internal structures appears to be decisive. It is by creating situations in which students are given certain decision-making powers and can see the effects of their decisions that one can hope to provide sound preparation for participation and to develop thoughtful, critical minds.

The opportunity given students to choose their subjects, to proceed at their own pace and to vary the length of their training could be attributed to this desire to develop independence and responsibility.

Nevertheless it will be noted that there is a considerable gap between these wishes and reality. The main reasons given are material : problems of organisation or lack of self-teaching material. The Swedish experiment is incontestably the most innovatory in this area although the results cannot yet be described as conclusive.

1.2.3. INTERNAL MOBILITY

One of the most marked characteristics of the systems examined, the Swedish system being certainly the prime example, is the ease of the transition from one stage to another, even from one form of training to another.

These measures satisfy the sixth criterion for sound vocational training. Nevertheless, the criteria of level, attainment and diplomas acquired still remain thoroughly valid even when catching-up arrangements are made.

Special training is given to enable teachers to fulfil the function of tutors and guides to the pupils. It will be seen below that internal mobility is apparently unconnected with what goes on outside the system.

At their assessment meeting the visiting experts expressed an opinion which must be recorded, for it demonstrates the limits and dangers of uncontrolled internal mobility. The experts considered that internal mobility is an expedient to be developed with caution. A certain demagoguery together with an incomplete understanding of the phenomenon leads in some cases to a situation where internal mobility is made the object of the system.

However, it is better to help young people to remain in the stream which they have entered than to offer them easy bridges or the temptation to combine options arbitrarily, resulting in a mosaic pattern of training - a sort of misunderstood comprehensiveness. Similarly, when the pupil is experiencing difficulty, it is better to suggest compensatory education than shortened courses.

This is just as valid for successful pupils. Is there any advantage today for a young person receiving a vocational diploma to continue indefinitely to the end of the system? This is a question of employment. A skilled worker has perhaps - relatively - more chance of finding employment than a certificated student, and continued training schemes should enable him to prepare for and achieve his mobility just as well as if he remained in the system.

1.3.1. to 1.3.5.

Probably because of lack of time, the researchers' replies to the questions on the organisation of teaching contained no noteworthy information. It is true that these questions cut across the preceding ones and that they centred on the same idea: do the systems encourage mobility? We have seen that they are indeed open to internal mobility and that it is possible that they favour external mobility but with certain restrictions.

It will be noted that the concept of unit/credits is developed only in the United Kingdom: since the other experiments were generally designed before the dissemination of ideas on the unit/credit system (5), there should be a new wave of innovation throughout Europe when this concept is more thoroughly understood.

As for the question under 1.3.2.g concerning the role of students in the management of their institutions, the researchers were particularly struck by what they saw in Italy at the ARTIGIANELLI Vocational Training Centre. It is true that this experiment is developing in a rare climate of freedom - even isolation - to be found only in Italy. The two Italian reports provide full information on this last point.

2.1.1. to 2.3.4.

We had thought that one of the main features of a system "encouraging mobility" would be its arrangements for selection (at entry), guidance (within the system) (see above 1.2.3.) and placement (on leaving).

However, the systems observed are distinguished rather by a questioning of mandatory or imposed selection (except in Sweden), by doubts concerning the validity of selection tests (Italy "CORNI") and by a return to some measure of liberalism (Switzerland). This is perhaps indicative of a particularly uncertain period in employment and consequently in the choice of training.

There are several factors behind this attitude, the two main ones being :

- the inability of selection and placement arrangements to master the phenomenon of employment and unemployment among young people (see the Spanish report) ;
- a tendency for vocational training systems to turn in upon themselves and to make their own objectives predominate over those of the occupation.

We seem to be facing a dysfunction due to the fact that arrangements based on the exhaustive listing of jobs, and the continuous "despatching", of distribution of "mobile" trainees to jobs whose number and nature correspond to their number and training, no longer work today. But is this a reason for thinking "it does not matter what the training is as long as it is 'sound', provided it is 'interesting', etc" or "it does not matter what the training is since in any case the job can no longer be predicted" ?

In the absence of quantitative indicators (particularly those mentioned under 3.2.1), it is impossible to know whether systems designed in the light of a changing and expanding economy are still valid in times of recession and in the face of pressing though diffuse social demand.

All that can be said is that systems in this context, if they are to remain dynamic, must be constantly inventing, innovating and readjusting.

IV. CONCLUSION

Having set out to find vocational training systems which encouraged mobility, we were led to question this approach even before beginning the enquiry.

We then thought that there were perhaps some fundamental "invariable" traits characteristic of "sound" technical and vocational education.

The reports below show that :

- . all new systems have a common core and grouped training ending with specialisation ;
- . all provide all-round training or at least ensure a balance between general and vocational education by holding, more or less, to what has been called the "law of the three-thirds" (one-third general education, one-third vocational education, one-third practical work) ;
- . all prepare for social integration, some through traditional courses, others more actively ;
- . all allow for differentiation of length of training, either in the length of training cycles, or through options, or through the permeability of the system ;
- . all provide for a permeability (flexibility) which, if not total (we have seen that this was not the object), is at least more extensive.

But are these really new characteristics ? Many systems, which do not claim to be innovations, demonstrate the same general features.

Is there therefore some novel aspect which we have overlooked ?

Is what is lacking in originality to be sought in density or intensity ?

Has a sort of qualitative consensus been reached which has eliminated any but minor differences of detail ?

Looking more closely, it now appears that we have overlooked the most specific characteristic of "sound" technical and vocational education.

This is the attitude of the head of the institution and of his teaching staff and, in general, the support of a specific social group (students, teachers, parents, trade unionists, employers) for objectives and values recognised as harbingers of the future.

This explains why sometimes dissimilar experiments should be designated as innovations characteristic of "sound" technical and vocational education. Innovation first takes shape as a desire to innovate and it is this desire to innovate which first strikes the observer.

Here we join with the analysis of the visiting experts who, reviewing the report at their last meeting (D), considered that a "sound system" meant primarily "sound teachers", thus agreeing with the experts on basic training cited above : "The sound values are not a list of qualifications or carefully defined contents but the competence of the teaching staff, the structure of the institution and the basic features of society".

This is not a new discovery. But there is food for thought here nevertheless : there is no point in formally defining a system and improving its operation if there is no creative participation, from the design stage to the implementation stage, by those for whom the system works and those who make it work.

Yves Deforge
Programme Adviser

B I B L I O G R A P H Y

- (1) CCC/EGT (75) 23 How, and to what extent, technical and vocational education can encourage occupational mobility.
- (2) DECS/EGT (75) 36 Differences of interpretation and conceptual ambiguity : mobility.
- (3) CCC/EGT (76) 27 Interim report by the Programme Adviser
- (4) CCC/EGT (72) 32 The objectives of technical and vocational education.
 CCC/EGT (73) 17
- (5) CCC/EGT (76) 32 A system of vocational qualifications based on objectives and sub-objectives in terms of skills amenable to unit/credit grouping
- (6) DECS/EGT (72) 86 Equipment of workshops for technical education in the light of technological progress.
- (7) CCC/EGT (77) 30 Basic training, synthesis and reports.

WORKING PAPERS

- (A) DECS/EGT (76) 17 Report of the first meeting
 (18 - 19 March 1976)
- (B) DECS/EGT (76) 29 Report of the second meeting
 (10 - 11 June 1976)
- (C) CCC/EGT (76) Misc 36 Questionnaire
- (D) DECS/EGT (77) 7 Report of the assessment meeting
 (10 - 11 May 1977)

QUESTIONNAIRE

1. THE EDUCATIONAL SYSTEM

1.1. Situation of the system to be observed and described

1.1.1. Simplified general flow chart of the educational system in the country visited

1.1.2. Reasons for, and situation of, the system observed : since when, how, why, how many, etc.

1.2. The objectives (of the first stage of training) in relation to the Montreux conclusions

1.2.1. Grouping and concentration

- a) list of "concentrated" vocational families
- b) comparison with former nomenclatures
- c) how this concentration has been carried out :
 - . guiding concept
 - . sources of information
 - . methodology
- d) trends
 - . towards new combinations
 - . towards sub-divisions
- e) what proportion of the range of types of training is affected by these groupings ?
- f) proportion of young first stage trainees affected by these combinations
- g) who lays down the guidelines (see 2.1.2.) ?

1.2.2. All-round training

- a) proportion of "general" education courses ("academic subjects")
- b) time devoted to team and individual sports
- c) time devoted to art subjects
- d) cultural democratisation (non-vocational fields)
 - . cultural visits
 - . theatre
 - . other activities
- e) outside activities
 - . visits to firms (preparation, visit and follow-up)
 - . other visits

- f) knowledge of economic and social life gained in the form of :
 - . classes
 - . practical work, surveys, etc
 - . lectures
- g) knowledge of the rights and duties of the citizen and the producer
- h) is there preparation for trade union activity, decision-making, etc ?
- i) is vocational training receptive to technical innovation ?

1.2.3. Preparation for mobility

1.2.3.1 Horizontal (sectoral) mobility

- a) within the system
 - . the choices offered
 - . can one change direction during training ?
- b) sectoral mobility after initial training
 - . are there agencies designed to facilitate this mobility ?
 - . legal provisions
 - . facilities (time off, training leave, etc)
 - . recognition of qualifications

1.2.3.2 Vertical mobility (promotion)

- a) within the system are there channels leading to the second stage :
 - . existing
 - . practicable (numbers concerned, results)
 - . facilities (curriculum adjustments, bridging classes)
 - . recognised ?
- b) external to the system
 - . same questions as for 1.2.3.1 b)

1.3. Practical organisation of education

1.3.1. Material organisation

- a) age of entry
- b) duration of training
 - . uniform
 - . differentiated
 - . flexible in relation to individuals
- c) forms adopted
 - . alternation
 - . full-time
- d) infrastructure, buildings, workshops

1.3.2. Organisation of teaching

- a) conventional (number of pupils per class or group)
- b) work in teams or differentiated groups
- c) independent work
 - . is there a resources room (self-instruction) ?
- d) are there units or modules (other than sub-divisions corresponding to study years) ?
 - . (brief description in relation to the idea of mobility)
- e) is practical work :
 - . traditional
 - . original
 - . closely related to practice in industry ?
- f) other original teaching solutions which may promote mobility
- g) are the following practised :
 - . participation
 - . self-management ?

1.3.3. Award of vocational qualification

- a) Mode of evaluation
 - . final examination
 - . periodic tests
 - . crediting of units
 - . continuous assessment

1.3.4. Complete description of a curriculum (in a field or special subject to be determined)

- a) number of staff required
- b) costs in relation to the previous system
- c) prospects for development

1.3.5. Teacher training

- a) what is done to ensure that teacher training keeps pace with innovations ?
 - . teachers in general education
 - . teachers in vocational subjects ?
- b) what is done to inform serving teachers and to change their attitudes ?

2. THE INFORMATION SYSTEM

2.1. Knowledge of the employment situation (forecasting)

2.1.1. Existing arrangements

- a) for acquiring knowledge of the employment situation
- b) for forecasting employment conditions and trends in qualifications required

2.1.2. Qualified workers as a source of information

- a) in determining curricula
- b) in forming combinations
- c) in the organisation of teaching
- d) in examinations

2.1.3. Constitution of committees

- . informal
- . institutionalised
- . joint (employers - ministry)
- . tripartite (employers - employees - ministry)
- . other parties consulted (pupils, parents, etc.)

2.2. Choice of speciality

2.2.1. At school (on entry into the system)

- a) means of information used by those responsible for the selection
- b) criteria
- c) meaning given to the expression "positive selection"
- d) influence of previous education (introduction to technology at the intermediate stage) ?
- e) is the selection :
 - . mandatory
 - . mandatory but subject to appeal
 - . simply a recommendation ?

2.2.2. Method of guidance (within the system) for :

- a) the choice of internal reorientation
- b) the choice of optional subjects
- c) the choice of reinforced studies

2.2.3. Vocational guidance (outside the system)

- a) proportion of trainees whose first employment is in the field covered by their initial training
- b) proportion selecting a different sector
- c) proportion selecting supplementary training
- d) identification of the agencies ensuring such mobility (see 1.2.3)

2.2.4. Questions common to 2.2. as a whole

- a) how is supply adjusted to meet demand
 - . in quantity (numerus clausus etc)
 - . in quality (opening and closing of channels) ?
- b) how is the guidance system organised
 - . single agency
 - . several agencies :
 - . state
 - . professional ?

3. THE RESULTS

3.1. Qualitative indicators

3.1.1. Opinions of the parties concerned

- a) teachers, employers, guidance and placement services, employees, trade unions, pupils, ministry

3.1.2. Types of questions to be put to the above

- a) are the pupils "better trained" ?
- b) are they more "adaptable" ?
- c) are the results markedly different from those obtained under the conventional system ?
- d) are those who have completed their training better able to undertake further training (vertical mobility) ?
- e) are they better able to change their occupational sector (sectoral mobility) ?
- f) should the system be developed ?
- g) are there financial obstacles ?
 - . other obstacles ?

3.2. Quantitative indicators

Three types of indicators are suggested.

3.2.1. Indicators to be obtained from placement services

- a) comparative unemployment rates for persons trained under the non-experimental system and persons of the same generation and specialisation trained under the experimental system
- b) comparative average length of unemployment periods for the same categories
- c) conditions of placement : percentage of placements involving a change of occupation or sector, for each type of training in a given speciality and for a given generation

3.2.2. Indicators to be obtained from further vocational training centres

- a) comparative success rates of the two types of training in later training courses (for a given speciality and age group)

3.2.3. Indicators furnished by career follow-up studies

- a) for a given generation and a given speciality, is the range of occupations engaged in by persons who have been trained under the experimental system broader (after one, two or five years) than that of persons with a non-experimental training ?

TRAINING FOR SKILLED WORKERS IN BELGIUM

I. FOREWORD

Introduction

Comments on the attached paper (reference as for items dealt with in Section II - "Detailed replies").

- 1.1.1 After a uniform pre-school (3 to 6 age-group) and primary (6 to 12 age-group) system, secondary education in Belgium is sub-divided into four courses: general, technical, artistic and vocational.

The general course has a high proportion of theory and comparatively few technical and practical subjects. Technical and practical subjects play a greater part in technical and art courses, and a predominant part in vocational courses.

The choice of school career is gradual, as is shown in Table 1.

From the third year of secondary education onwards, the subject matter depends on the main objective: rapid entry into working life ("qualification" courses) or continuing studies (transitional courses).

There are thus six possible courses with numerous ways of changing from one to another (Table 2):

- Six-year general transitional course leading on to higher education;
- Technical and art "qualification" courses, whether short (4 to 5 years) or long (6 to 7 years) preparing for direct entry into working life;
- Vocational "qualification" courses, whether short (4 to 5 years) or long (6 to 7 years), preparing for direct entry into working life, but with lower qualifications.

- 2.1.1.a Monographs per occupation have been drawn up.

2.1.1.b There is no central organised system for forecasting jobs and trends in qualifications. However, information about the regional labour market is provided by local employment offices ("ONEM").

2.1.2.b The forming of combinations appears to be investigated mainly by the study services of the Ministry of Education. In some cases, combinations are suggested by the trade (eg bricklayer, reinforcing iron worker, joiner).

2.1.2.c The organisation of teaching is influenced by the participation by qualified workers, throughout the year, in the continuous assessment of learning.

2.1.2.d Aptitude to enter working life is assessed by a "qualification panel", which includes qualified workers in a proportion not exceeding members of the teaching profession.

3. It is rather too soon to assess, particularly in quantitative terms, the results of reform of this system. The first school leavers from the reformed educational system left school not more than two years ago.

3.1 Teachers and psychologists consider that those educated under the reformed system are more outward looking in school life, are more capable of gradually coping with their own problems, and, generally speaking, mature earlier.

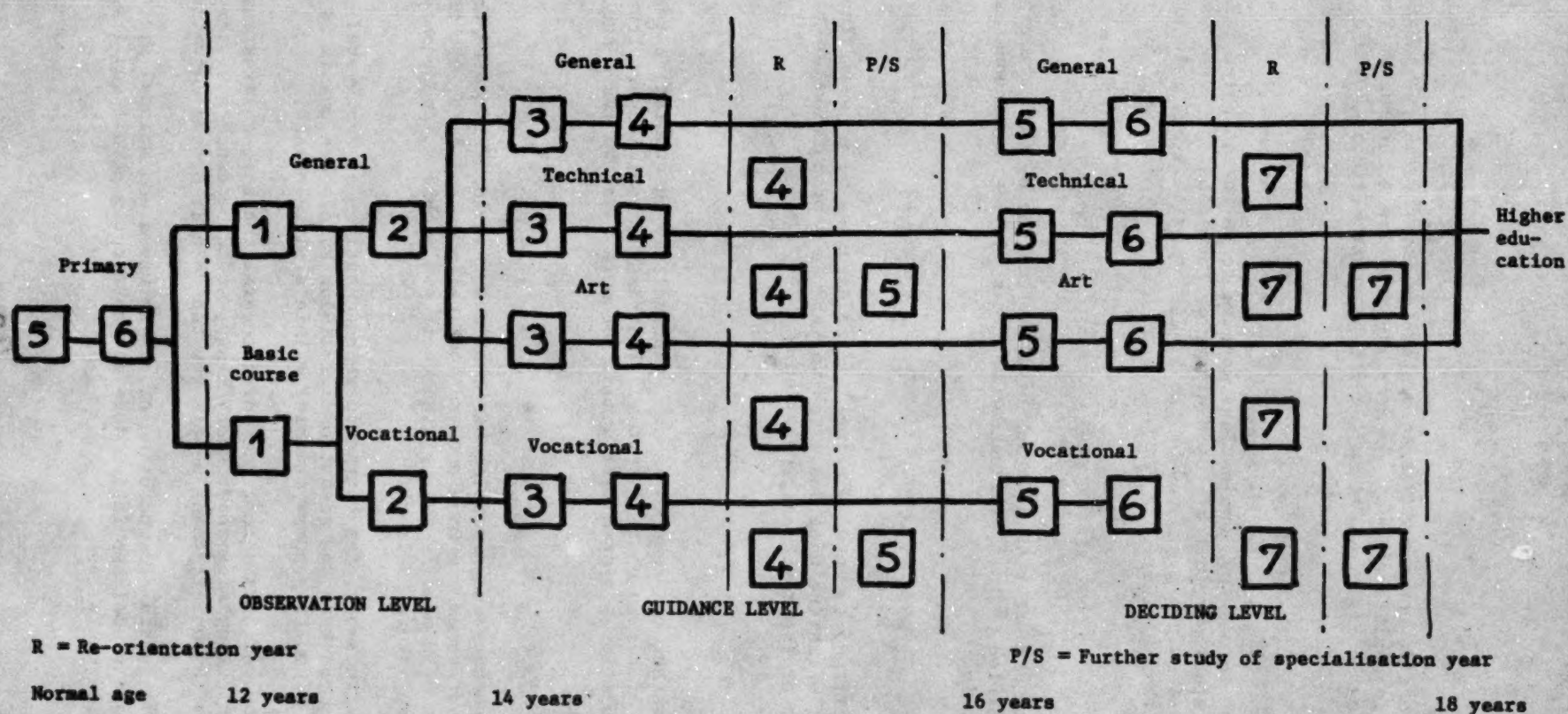
Furthermore, the contacted representatives of employers, trade unions, teachers and educational decision makers are unanimously in favour of multi-purpose training within a given branch.

However, it is felt that over-general courses, culminating in "a little knowledge about everything", would be dangerous: the trade prefers to recruit young people who can quickly become operational.

The general introduction of the reformed educational system for the whole school population does not apparently entail any insurmountable financial obstacles.

Table 1

BELGIUM



ORGANISATION OF SECONDARY EDUCATION (Act of 19 July 1971)
French speaking sector

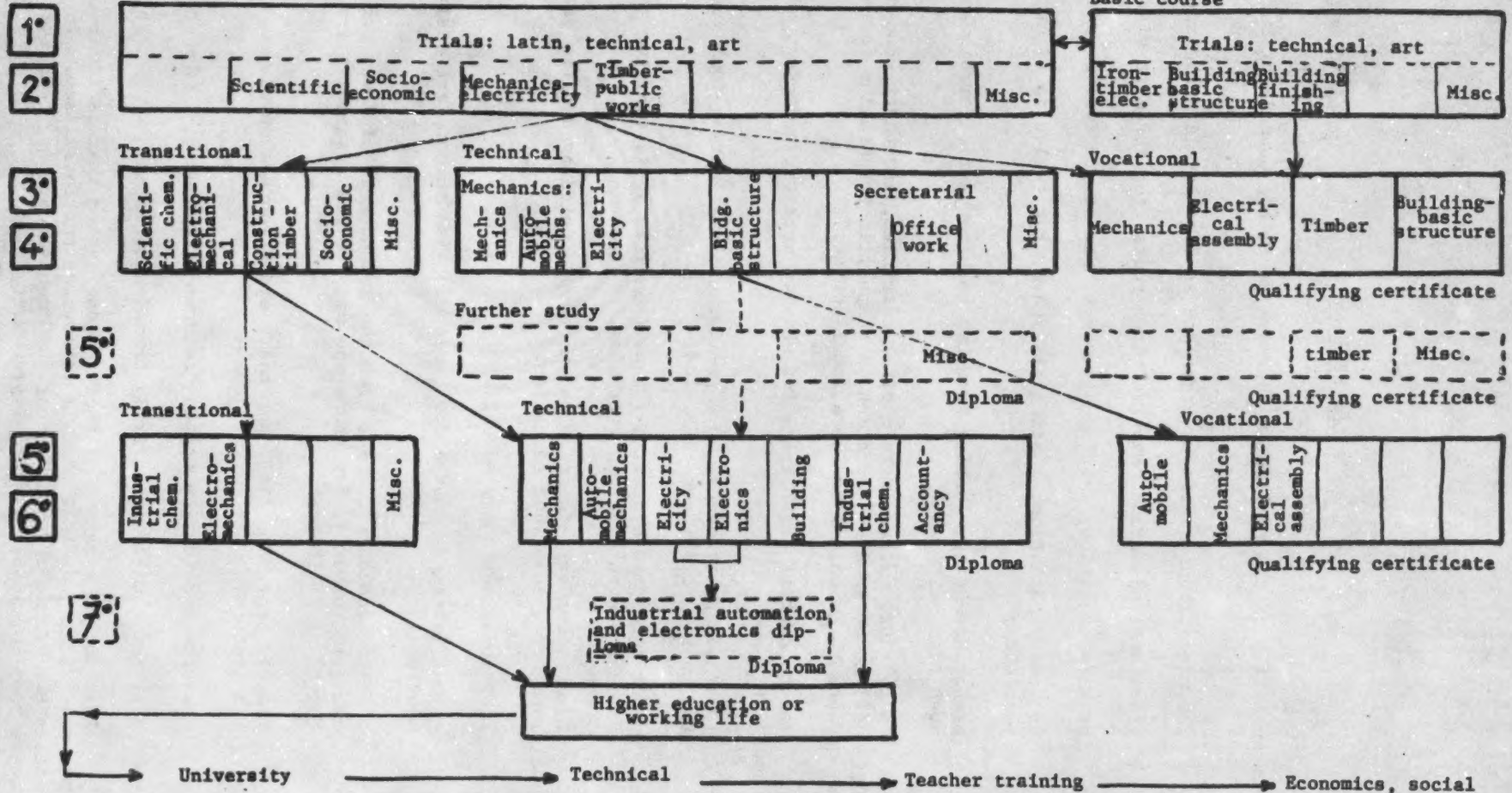
Table 2

REFORMED SECONDARY EDUCATION

BELGIUM

Observation

Basic course



II. DETAILED REPLIES

The numbering of the replies is the same as in the Council of Europe's questionnaire.

1.1.1 The educational system is organised at four levels and comprises:

- pre-school education, lasting three years, for three to six year olds;
- primary education, lasting six years, for six to twelve year olds;
- secondary education, lasting six years, for twelve to eighteen year olds;
- higher education, lasting from two to nine years, for students aged over 18.

In Belgium, unlike certain other countries, secondary education is not confined to general education as a specific preparation for university, as opposed to technical and vocational courses.

In the context of training for skilled workers, secondary education comprises:

- lower secondary education ("premier cycle") lasting four years, for twelve to sixteen year-olds;
- upper secondary education ("deuxième cycle"), lasting two years, for sixteen to eighteen year-olds.

Lower secondary education may be supplemented by a fifth year of additional or specialised education.

Vocational secondary education includes:

- a long secondary course for those who wish to complete a six-year course;
- a short secondary course, from the second year of lower secondary education onwards, for those who wish to leave school after the fourth or fifth year.

Since 1 September 1969, secondary education has developed into two parallel systems:

- a system arbitrarily termed "reformed" (rénové);
- a system equally arbitrarily termed additional.

This does not mean that there is one system that is ideal and progressive, and another that is retrograde and fossilised. In practice, within the framework of different fundamental options, both systems leave room for adaptation and improvement.

In terms of schools, the reformed system has been introduced in:

- a. 162 out of 265 state schools, ie 61% of such schools;
- b. 60 out of 157 provincial or municipal schools, ie 38% of such schools;
- c. 108 out of 484 independent schools, ie 22% of such schools;
- d. 330 out of a total 906 secondary schools, ie 36.5% of all types of secondary schools.

On 1 September 1978, the reformed system is to be gradually introduced, year by year, in all state secondary schools not yet using the reformed system.

By 1 September 1983, there are to be no more state schools using the traditional system.

Schools other than state schools will ultimately follow suit, but no predictions can be made on this point.

In terms of pupils:

- in all schools, whether state, provincial, municipal or private, 35% of the pupils are in the reformed system;
- in state schools, 54% of all pupils are in the reformed system.

There are four forms of secondary education:

- secondary general education;
- secondary technical education;
- secondary art education;
- secondary vocational education.

The four forms emerge after the first year.

Under the traditional system:

- general and technical courses are organised from the outset;
- vocational education is organised from the second year onwards, following on normally from the technical course;
- art education is organised from the fourth year onwards, following on from the general or technical courses.

In the reformed system, in practice:

- general education is organised from the outset;
- vocational education is organised from the second year, following on from general education;
- technical and art courses are organised from the third year onwards, following on from the second year of the general course, which has an optional four hours' technical or art education.

As a rule, it is easy to understand how the various elements fit into the educational system, because this is based on the juxtaposition of familiar concepts such as secondary and higher, technical and art.

However, for the purposes of logical classification in terms of preparation for working life, other concepts must be used in order to define courses that are not an immediate preparation for work as opposed to courses that prepare for immediate entry to an occupation.

In these terms, secondary education provides:

- transitional courses;
- qualifying courses.

The main aim of transitional courses is further study, to the highest possible level, whilst also offering possibilities for direct entry into jobs for which no specific qualifications are required.

The main aim of qualifying courses is preparation for entry into working life, into skilled jobs, whilst still offering the possibility in some cases, of continuing studies to the highest possible level.

As matters now stand, at secondary level:

- a. general courses are always transitional;
- b. from the third year onwards, technical and art courses are either transitional or qualifying, with the possibility of carrying on studies up to higher education;
- c. from the second year onwards, vocational courses are always qualifying courses, without the possibility of continuing studies up to higher education.

To sum up, at secondary level, a combination of factors adds up to six possible types of courses from the third year onwards:

- 1. general courses, transitional;
- 2. technical courses, transitional;
- 3. technical courses, qualifying;

4. art courses, transitional;
5. art courses, qualifying;
6. vocational courses, qualifying.

These rather fine distinctions, instituted in the regulations, call for certain further explanations as to the reasons why these six types of course exist.

The criteria used for the establishment of this classification are not to be found in laws but are based on the whole, in practice, on the two traditional approaches to the educational process, viz:

- the abstract approach, based on the general, theoretical or conceptual;
- the practical approach, based on the specific or tangible.

General courses correspond to the abstract approach in the field of the arts, pure science and human science.

Transitional technical and art courses correspond to the abstract approach in the field of economic and social science, technology and art.

Qualifying technical and art courses in the above fields correspond to a combination of courses using either the abstract or the practical approach.

Vocational courses correspond solely to the practical approach.

Secondary education exists in the form of full-time courses and part-time courses, known as "promotion sociale" courses.

In the context of the whole educational system set out above, this document deals with vocational education at lower secondary level, the purpose of which is to provide initial training for skilled workers.

1.1.2 In the sectors organised along progressive lines, mobility is fostered by means of :

- delaying the choice of skill, which now takes place after a period of observation designed for the improved assessment of aptitudes;
- stepping up the relative importance of basic general education;
- a more general approach to vocational training;
- teaching machinery geared to changes in qualification.

1.2.1 Specialisation of training is based on:

- sections, in the traditional educational system;
- options, in the reformed educational system.

In the traditional system, specialisation in sections operates from the first year onwards.

In the reformed system:

- the first year course is common for all students;
- there is specialisation in the form of options from the second year onwards.

As a rule, in the traditional system, sections are more specialised than options in the reformed system, which is based on a more general approach in the context of gradual guidance.

In the reformed system, the aim in delaying specifically vocational training for one year is to increase the amount of all-round education before embarking upon specialisation.

All-round education is taken to mean the acquisition of a certain minimum level of knowledge which is essential for all individuals, even those performing the most modest tasks.

As regards concentration in vocational families, we are in a transitional period and the trends are still relatively unclear.

In theory, among administrators and educational decision-makers, the tendency is to achieve as much grouping as possible.

In practice, we find the opposite trend, because employers like to have specialised skilled workers at their disposal as quickly as possible.

The progressive trend is expressed in the form of merged courses.

In the traditional system, there is a mechanics section from the first year onwards.

In the reformed system, concentration and gradual guidance operates as follows:

- the first year provides an all-round common course;
- the second year provides a general vocational training in the form of an "iron and steel - electricity - timber" option;
- the specialised mechanics course is organised from the third years onwards only.

In the traditional system, there are specialised sections from the first year onwards in "knitting", "dress-making", "weaving", "domestic science", "rural domestic science" and "family aid".

Under the reformed system, after the first year common course:

- the second year provides a general vocational training in the form of an option "clothing - domestic science";
- the third year has only two specialised courses, in the form of the options "clothing" and "service for people" ("service aux personnes").

Within the framework of separate options, mobility is also fostered by the organisation of courses common to several options.

In the third and fourth years, this process is found in the options "mechanics", "sheet metal work - bodywork", "welding" and "electrical assembly". Courses may be common to two, three or four options. The proportion of courses common to two options ranges from 12 to 22%. Leaving aside common training, the qualifying courses common to four options amount to only 2%.

In the absence of further concentration, the organisation of common courses for several options is likely to spread to other vocational families. For instance, common courses could be arranged for the options "timber" and "building".

The opposite trend has occurred in agronomy.

In the traditional system, there is a general vocational course in the form of an "agronomy" section throughout the four training years.

In the reformed system, after the first common year:

- there is specialisation in horticulture from the second year onwards;
- specialisation in agriculture from the third year onwards.

1.2.2.a. For the whole four-year training period, the proportion of "general" courses is approximately 40% in the traditional and 46% in the reformed system.

1.2.2.b. 5% of the total timetable is devoted to physical education and sport in the traditional system, and 7% in the reformed system.

1.2.2.c. Art as general education, excluding drawing connected with vocational training, amounts to 4% in the traditional timetable and 1% in the reformed system.

1.2.2.d Cultural democratisation operates in practice within the framework of the general training.

In theory, in the reformed system, over and above compulsory general education, schools have two to four hours per week, depending on the study year, which they may devote freely to:

- organising optional extra activities designed to open up perspectives in non-vocational fields and in fields not covered by general education;
- or to back up vocational training.

In practice, these hours are generally used to back up vocational training and not for the democratisation of culture by means of extra-educational activities.

1.2.2.e and i Yes.

1.2.2.f, g and h No, because these items occur at the upper secondary stage of vocational education.

1.2.3.a Pupils in vocational training:

- cannot change courses if this entails moving into a different type of course, ie into general educational, technical or art courses;
- can change courses if this merely entails changing to a different section, within the framework of the vocational course.

They are entirely free to change option or section during the first three years.

In the case of admission to the fourth year or the fifth further study or specialisation year, changes are subject to a favourable opinion by the "conseil de classe" (class council).

If the change does not entail any major problems of reorientation, and if the gaps to be filled in are not too large, the pupil is accepted and provided with facilities for catching up or adapting.

If the change entails major problems of reorientation or if the gaps to be filled are too great, the pupil is not accepted. In such cases, the pupil will have to take a special fourth-year course known as the "reorientation fourth".

1.2.3.1.b After initial training, sectorial mobility in the form of a change of qualifications may be achieved by means of:

- part-time education or evening classes;
- "secrétariats d'apprentissage" under the Ministère des Classes Moyennes (Ministry for small and medium-sized firms);
- vocational redeployment centres under the Ministry of Employment.

As regards mobility of adults;

- this operates while the workers carry on their job;
- it is organised within a system of special facilities known as the time-credit system, which provides for day release for training without loss of pay.

In general, workers do not take advantage of the facilities provided. Day release arrangements have been used by only 10% of the workers entitled to them.

As regards mobility of apprentices, they are given training during normal working hours but are not entitled to the time-credit system.

As regards mobility connected with redeployment, this applies only to unemployed workers who have to acquire a different qualification in order to find work more easily. They receive special pay from the Ministry of Employment.

Qualifications acquired under these training systems are recognised by employers.

1.2.3.2 After lower secondary vocational education (premier cycle), it is possible to move on to upper secondary (deuxième cycle) of the same type of course and to acquire more advanced training for jobs at a higher level.

Entry conditions are the same as those set out above.

Qualifications issued after completion of the upper-secondary course are recognised.

Outside the full-time school system, there is vertical mobility for those not attending upper-secondary level courses. In such cases, workers wishing to enter more highly qualified jobs may, *mutatis mutandis*, benefit from the conditions set out above.

1.3.1. a As a rule, children enter secondary-school education at the age of 12. However, entrants are frequently over this theoretical age, because many children fall behind in their school work, especially in vocational education.

1.3.1. b Within the general framework of the educational system, the normal, uniform duration of initial training is 4 years, which may be supplemented by a fifth year of further study or specialisation.

1.3.1. c Initial training is acquired:

- either entirely in full-time education;
- or initially in full-time education and later in part-time education;
- or entirely in part-time education.

Alternation does not exist if alternation is taken to mean:

- periods of full-time education followed by periods of part-time education, subsequently returning to full-time education;
- or periods of full-time education followed by periods on the job followed by a return to full-time education.

1.3.2. a Conventional organisation entails a maximum class size of:

- 25 for the first two years;
- 30 for the remaining years.

In some cases, there is a more favourable system for vocational courses, with the following conditions:

For the first two years, the maximum class size is 17 instead of 25.

The maximum is reduced to 8, 10, 15, 17 or 20 for certain practical activities.

1.3.2.b Work in teams is organised, but not differentiated groups.

1.3.2.c There is virtually no independent work.

1.3.2.d There are no unit/credits in full-time courses. This possibility exists in part-time courses.

1.3.2.e Combinations of teaching sequences are organised, in which the three types of work alternate.

1.3.2.g A form of participation exists, but only at upper-secondary level.

1.3.3 Training is evaluated by means of continuous assessment culminating in a final examination at the end of the fourth year and at the end of the fifth year of further study or specialisation.

The qualifications issued are:

- qualification certificates after the fourth year of vocational secondary education issued to students who have attended fourth-year courses of this type and have passed a qualifying test;
- qualifying certificate after the fifth further study or specialisation year of secondary vocational education, issued to students who have attended the fifth year of this type of education and have passed a qualifying test.

Aptitude to enter working life is assessed by a qualification panel comprising, for each branch of study, the principal of the training establishment or his deputy, members of the teaching profession and members from outside the school, whose number must not exceed that of the members of the teaching profession.

The outside members of the panel are:

- chosen for their competence in terms of the qualification in question;
- appointed at the beginning of the school year by the organising authority or its representative.

Assessment for the award of a vocational qualification is based on:

1. items in the pupil's file concerning especially his attitude to work and group behaviour;
2. presentation of work done by the pupil during the school year;
3. practical tests for which the work referred to in (2) above is the starting point;
4. interviews on points relating to (2) and (3) above.

The panel members from outside the school are authorised to make assessments of the pupil's work during the school year, and to have these assessments included in the pupil's file.

The panel deliberates on the award of qualifications and, at an initial session, pupils are either accepted or referred.

For each of the referred candidates, the panel makes observations, and on the basis of these observations the class council ("conseil de classe") decides an individual work programme.

At a second session, the panel finds out how far the candidate has made good his failings, and decides on his acceptance or rejection.

1.3.5 In the course of their initial teacher training:

- teachers of general subjects are still not sufficiently acquainted with innovations;
- teachers of vocational subjects are relatively well acquainted with technical innovations but still not sufficiently acquainted with educational innovations.

In-service training for teachers operates, though still to an insufficient extent, in the form of a small number of information sessions.

- 2.1.2 In general, curricula are worked out by committees of inspectors and teachers who, in theory, have previously contacted employers' representatives.

For certain subjects, a new trend is emerging, and curricula are drawn up by committees of inspectors, teachers, and employers' representatives.

Employers play a part in continuous assessment and in final examinations as described above.

- 2.1.3. Curriculum committees are informal and composed according to the above rules.

Employees, parents and pupils do not yet sit on these committees. However, future participation by these parties should not necessarily be ruled out.

- 2.2.1 The negative influence of the assessment system has been ended by the following means.

The concept of a successful completion of a year ("terminer une année avec fruit") has been completely overhauled, and now means that the pupil is considered capable of continuing studies in a higher year, in at least one option or section of vocational education.

Success is now established by the joint assessment of the class council, which makes its assessment in terms of guidance on the basis of the pupil's potential.

In order to eliminate the large number of failures at school and large-scale repeating of the year's work, it is preferable to give a positive judgement of studies, with certain restrictions, rather than a negative judgement made with a view to selection, making the pupil repeat the whole year's work for the sake of certain failures found in a retrospective check-up.

On the basis of these principles, each of the 4 years is given official sanction in the form of a certificate of guidance issued after the class council's deliberations.

The certificate bears at least one of the 3 following phrases:

- the pupil has successfully completed the year and can be admitted to the next year of the same course;

- the pupil has successfully completed the year but cannot be admitted to the next year without restrictions concerning certain specified sections or options;
- the pupil has not successfully completed the year.

For instance, in order to illustrate the scope of the new provisions, the new process works as follows:

1. the second-year class council considers that the pupil is not capable of continuing his studies, even in one section or option. In such cases, which seldom occur as a rule, the pupil has to repeat the year;
2. the class council considers that the pupil is capable of continuing his studies without restrictions.

In this case:

- a. it declares full admittance to the third year;
- b. it may include its assessments in the pupil's file, eg:
 - recommend options,
 - options not recommended,
 - any other items concerning guidance;
3. The class council considers that the pupil is not capable of continuing in certain options or sections.

In this case:

- a. it declares admittance to the third year with restrictions;
- b. it mentions on the guidance certificate those options or sections subject to restrictions;
- c. it inserts in the pupil's file the assessments referred to in 2 (b) above.

The pupil does not have to repeat the year unless he wishes to continue his studies in those options or sections subject to restrictions.

The guidance thus defined is compulsory.

- 2.2.2 Choices of options, extra study in certain options and changes of option are arranged without too much difficulty within the framework of a guidance system provided by the class council and the psycho-medical-social centre.

TRAINING FOR SKILLED WORKERS IN ITALY

Since two experiments were involved and not a generalised system the experts presented their comments in two separate documents

A. The "ARTIGIANELLI" Vocational Training Centre at REGGIO EMILIA

I. FOREWORD

The experiment presented by the "ARTIGIANELLI" Vocational Training Centre is common to 5 other similar institutions coming under the National Office for Vocational Education (ENAIIP) which itself comes under the Christian Trade Unions. It is original in more than one respect. The replies to the questionnaire give the main characteristics.

The visiting experts from the Council of Europe felt that the following points called for a supplementary commentary.

The first 4 of the 6 criteria set out on page 2 of the questionnaire are undoubtedly satisfied. On the other hand, there is no differentiation in the length of training courses according to specialities or standards unless it is assumed that the possibility to leave at the end of 2 years does indeed constitute a differentiation.

Permeability (item 6) is not a characteristic of the system, although one of the patterns presented to us seems to indicate a desire to promote a return to long studies and continuous training (by means of "training capital" introduced in Italy).

1.2.2 The visiting experts wish to emphasise that the concept of "complete training" has been particularly well understood and applied in the ENIAP experiment.

Only item i. (receptive approach to innovations) seems to us to raise a number of problems because of the relatively traditional facilities.

1.3.5 Another outstanding feature is the acceptance by the team of a genuine training philosophy. That coherence is obtained in 3 ways:

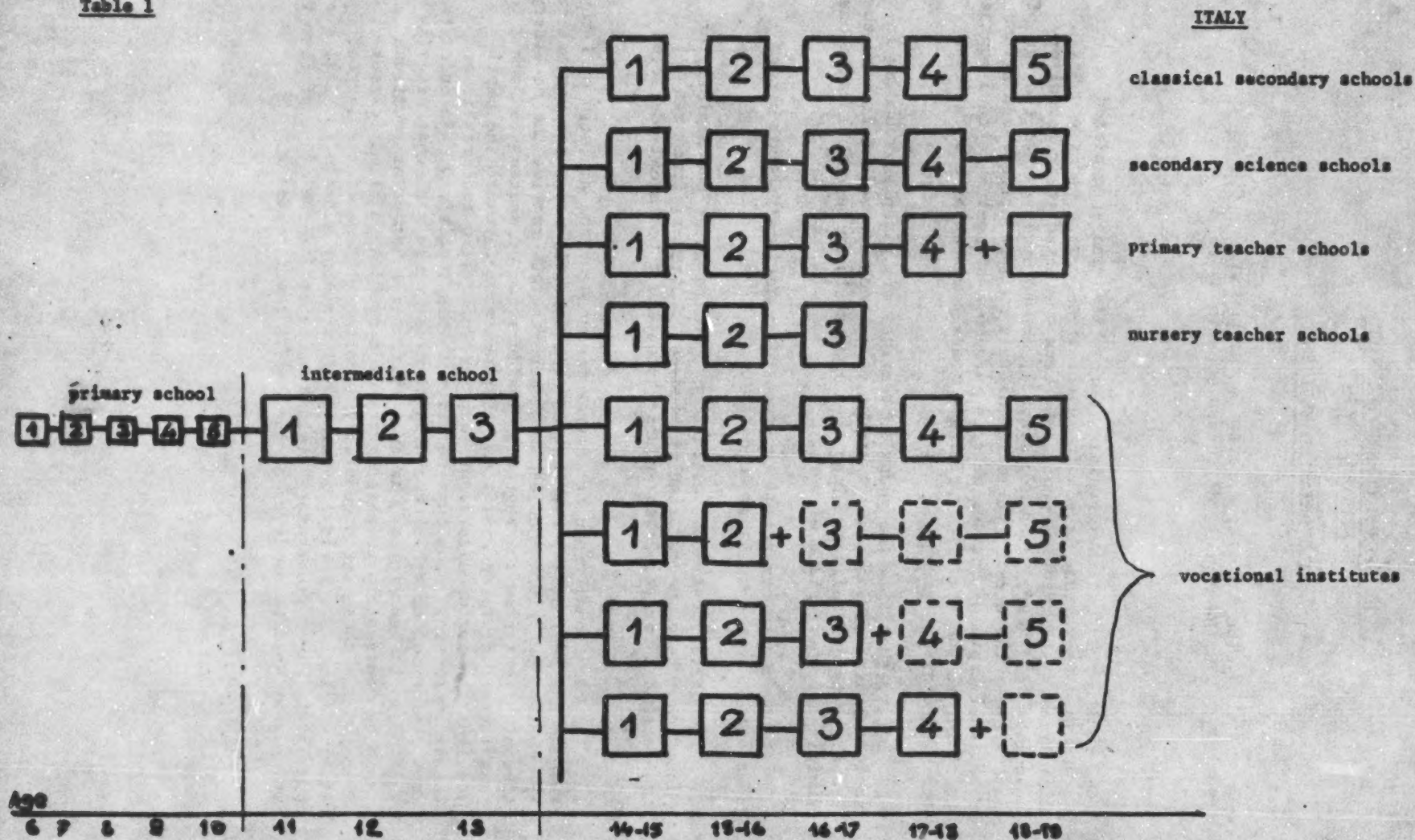
- the personal commitment of the teachers;
- special training in a training seminar;
- semi-programmed documentation prepared by national committees and circulated in the 6 institutions.

2. The visiting experts noted that the teachers used knowledge tests on entry and standardised evaluation tests which could be used in internal guidance. But school guidance (on entry) and vocational guidance (upon leaving the course) do not seem to exist in the form of organised services. The experts admit that they did not perhaps devote enough time to an examination of that question.

3. From the conversations we had it became clear that this training, which is very attractive for an educationalist, cannot yet be assessed by means of the criteria set out under item 3, since the first generations of pupils trained at the centre will be available on the labour market only in September 1977.

In view of the original nature of the training given by the centre it will be desirable to set up machinery to follow the vocation and social development of the young people concerned over a number of years. As an indication we join a very simplified organigramme of the Italian system (Table 1).

Table 1



**B. THE "FERMO CORNI" TECHNICAL
INSTITUTE AT MODENA**

II. DETAILED REPLIES

The paragraphs refer to the numbers
in the Council of Europe questionnaire

- 1.1 In Italy, vocational training for skilled and specialised workers is provided at various levels in institutions coming under a number of ministries. Accordingly, pupils who have completed their compulsory schooling (3rd year, secondary school), or who have reached the age of 15 and enter the working world immediately as apprentices, can attend vocational training courses covering a number of months (4 to 5 months according to the trade) comprising 4 hours per week at a vocational training centre.

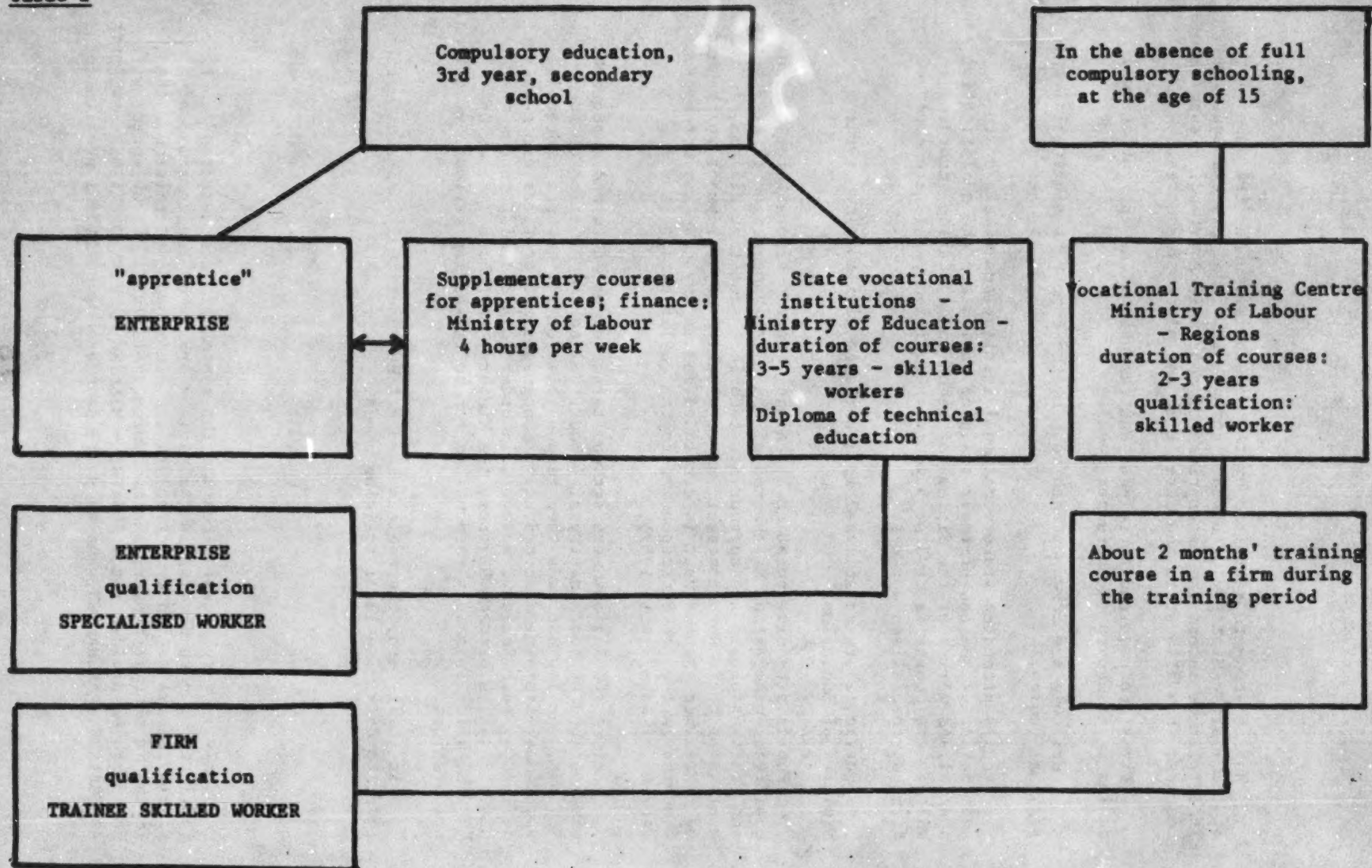
During that time the young apprentices are given a grounding in socio-cultural subjects and instruction in technico-scientific and the graphic arts disciplines. They then receive their technical vocational training at their place of work.

Young people can attend two types of vocational school after completing their compulsory education:

1. The State vocational institutions, coming under the Ministry of Education, where the duration of studies is 3 years; (they can then attend a further 2-year course to obtain a technical education diploma);
2. The vocational training centres financed by the Ministry of Labour - through the Regions. These centres come directly under the Regions or are managed by private bodies which nevertheless receive the necessary appropriations from the regions. The duration of courses is from 2 to 3 years according to specialities. During those 2 years, the pupil acquires the socio-cultural or technico-scientific and graphic or technico-practical knowledge peculiar to his speciality. In order to keep the period of school training in close touch with what actually goes on in the enterprise, as from this year a number of vocational training centres are organising training courses in firms lasting about 2 months and these are undoubtedly important. Some of the largest Italian firms have their own vocational training school (eg FIAT) where pupils are given preparatory courses suitable for the type of firm in which they will be employed at the end of their training.

- 1.1.1 See Table 2.

Table 2



- 1.1.2 Apprentices are recruited by the enterprises under the supervision of the Italian Ministry of Labour, through its local placement offices. These offices inform the enterprises of apprentices attending supplementary courses; they also state the date, time and place of courses.

Firms are required to release and remunerate the apprentice-pupil during school hours (4 hours per week).

Curricula are drawn up each year by the competent ministerial and regional bodies.

Pupils attending state vocational institutions take a state examination at the end of their training period for the qualification of specialised worker or the diploma of technical education according to whether the course is of 3 or 5 years. Qualified pupils are employed by firms as specialised workers.

Curricula are established in accordance with the law by the Ministry of Education.

Pupils attending vocational training centres also sit for a final qualifying examination at the end of their training period (2 or 3 years) and can thus obtain the appropriate technical education diploma, in the context of their work contract, after a period of employment which must be fixed when the contract is concluded and in any case may not exceed 6 months in the job corresponding to the qualification itself (Act No. 1146 of 14.11.1967).

Before the Regions were set up, technical profiles and monographs were defined by the Ministry of Labour. Since the creation of the Regions, the law has made them responsible for all matters concerning vocational training. Accordingly, monographs and profiles are now defined by each Region. However, in order to avoid differences in classification between Regions, the Ministry of Labour has set up "ISFOL" which is mainly responsible for co-ordinating regional vocational orientations.

In their turn, the regions have set up functional bodies at regional level to determine local training needs.

1.2.1

- a,b. Only in very recent times has the system of "concentrated" vocational families begun to develop in Italy, ie a system no longer aimed at a single specialisation but at polyvalent comprehensive training. Thus, in the industrial sector, the mechanical metallurgical sub-sector will no longer be divided into: TURNERS - MILLING MACHINE OPERATORS - WELDERS - ASSEMBLERS - MECHANICS, but we shall have a new vocational profile for a

polyvalent mechanic. This change is undoubtedly costly and, furthermore, it sacrifices narrow specialisation which however will have to be provided for by each enterprise. This system should give more satisfactory results, particularly regarding the range of work possibilities and mobility within the firm. In the electrical sector we now have the vocational profile of the polyvalent electrician and the industrial and civil electrician-fitter, etc no longer exists.

The same applies to the trade and services sector.

However, at the present time, only a few experimental vocational training centres apply this system, whilst the others continue to offer the traditional courses in each speciality.

As stated earlier, the idea which led to this grouping was to provide more opportunities for employment on completion of vocational training and the idea itself resulted from the enquiry carried out by our vocational training centre. In this Region, there are many small and medium-sized enterprises requiring staff able to perform more than one task if necessary. Admittedly, the enterprise will have to deal with the specific training of its staff which nevertheless will be more rapid than it would have been in an educational institution if we assume that the latter is able to renew its equipment regularly for otherwise it is impossible to achieve specialisation. Furthermore, the firm is able to provide its staff with ad hoc training.

Naturally, vocational families must be established according to rational criteria and a common plan of vocational affinities must be found without trying at all costs, ie for the sake of innovation, to bring about associations which have very narrow common denominators.

- d. It is fair to say that pupils, parents, enterprises and the social organisations in general have given this innovation a favourable reception.
- e. All our pupils are affected by these groupings.

1.2.2 Throughout his vocational training, the pupil receives 31 hours' instruction per week including 5 hours of theory and 16 of practical work.

- a. In the context of the theoretical disciplines, 4 hours are devoted to general culture, 5 to scientific subjects (mathematics, physics), and 6 to the technological and graphic arts group. The 16 hours of practical work take place on a rotation system in the various laboratories.
- b. No provision has been made for a specific syllabus for physical education in the curriculum. This activity is left to the personal initiative of the various groups of pupils and takes place outside the

school-timetable or during hours saved in each discipline or again during the afternoon leisure periods. However, in our view, adequate physical education is necessary. The sports practised are football, basket-ball, volley-ball, and, in some cases, skiing.

- c. No provision is made for education in the arts subjects at the vocational training centre in the curriculum for the industrial sector, metallurgical and mechanical sub-sector, however limited experiments to that end are at present in progress in the context of general culture.
- d. There are no compulsory subjects in that field. Participation in these initiatives is left to the discretion of the teachers and those in charge of the school; in any case they always take place outside the normal time-table.
- e. Many educational visits are paid during the school year to Italian and foreign industrial complexes. These visits are extremely important for the pupil's all-round training, in that when they take place it is possible to establish contacts with the workers, and the technical and commercial managers of the enterprise and see how production systems and sophisticated machinery. Problems concerning trade unions and the organisation of the enterprise are also dealt with.
- f. The general cultural syllabus is very important for the young people's human and social training.

Among the problems dealt with are social topics, eg the home, health, transport, school, etc. On the basis of a general topic all the facts are checked successively in the context of the enquiry and then everything is reduced to a local dimension.

Specific problems such as the Resistance in Italy, the Fascist period, etc are also studied.

- g. Civics is one of the subjects to which considerable attention is paid. It is not taught simply descriptively but by means of direct contacts with social life. A number of meetings are organised with trade union and employers' representatives, and officials from public bodies, etc.

We also deal with historical subjects which serve as a context for the consideration of our present economic system and its comparison with other systems.

- h. Some trade union preparation is provided by means of contacts with workers' organisations and, to a lesser extent, also be direct participation in the management of the school through various social management committees which are assigned specific tasks connected with the programming, management and discipline of school activities.

1.2.3

1.2.3.1 The pupil can decide to attend a vocational school after completing his period of compulsory education.

- a. When he enrolls he chooses the section which appeals to him most (sometimes as the result of advice from his family, or teachers at the secondary school, or even the Psycho-educational Guidance Centre).

Within that section he can then choose the type of qualification, eg

INDUSTRIAL SECTOR

METALLURGICAL AND MECHANICAL SUB-SECTOR

or ELECTRICAL OR ELECTRONICS SUB-SECTOR, etc

Thereupon he can choose his specific qualification within a sub-sector in the traditional centres, eg

METALLURGICAL AND
MECHANICAL SUB-SECTOR

TURNER
MILLING MACHINE OPERATOR
ASSEMBLER
WELDER

Same
group of
qualifications

This choice does not exist in our experimental centre which has adopted the system of grouped qualifications.

- b. The diploma of technical education obtained by the pupils after 2 or 3 years of training at a vocational training centre does not qualify them for entry to other types of state high schools without first sitting for an entrance examination. However, it is hoped that after the reform of the upper secondary school and vocational training this transfer will become automatic (in establishments with the same orientation).

1.2.3.2

- a. After completing his vocational training, if the pupil does not continue his studies in higher secondary institutions, he can no longer attend higher vocational courses financed and authorised by the state unless he attends courses organised by firms or private bodies. It is to be hoped that permanent training will be possible after the reform.

- b. Training leave does not exist in Italy.

However the worker can attend vocational training courses for a number of hours each year (in the last collective agreement the total number of hours was fixed at 150 per annum). Those attending vocational training courses do enjoy a number of facilities (paid leave to sit for examinations, the possibility of shift work in order to attend courses regularly).

1.3.

1.3.1.

a. Anyone who has completed his compulsory education and reached the age of 14 may enrol at a vocational training centre. If these conditions are not satisfied, enrolment depends on authorisation by the headmaster of the secondary school attended and an entrance examination.

b. The duration of vocational training courses is from 2 to 3 years according to the type of qualification.

Pupils who have obtained a qualification in 2 years may then attend a third training year to obtain a special qualification, eg in the metallurgical and mechanical sector: "toolmaker-assembler" - "carpenter-welder", etc.

c,d. Practical training is provided within the institution and from this year it can take place partially outside on an experimental basis in a firm (training course) as referred to earlier.

1.3.2.

a. Classes are made-up on the basis of an entrance test. The ideal number is 18 pupils per class. If the number exceeds 20, it is possible to call in an auxiliary teacher or double-up the class.

b,c. The method adopted is that of research and methodological polyvalence.

d,c. Pattern of the research method:

Motivation for study	-	Presentation of problem	-	Breakdown of the problem into variables	-	Search for supplementary information
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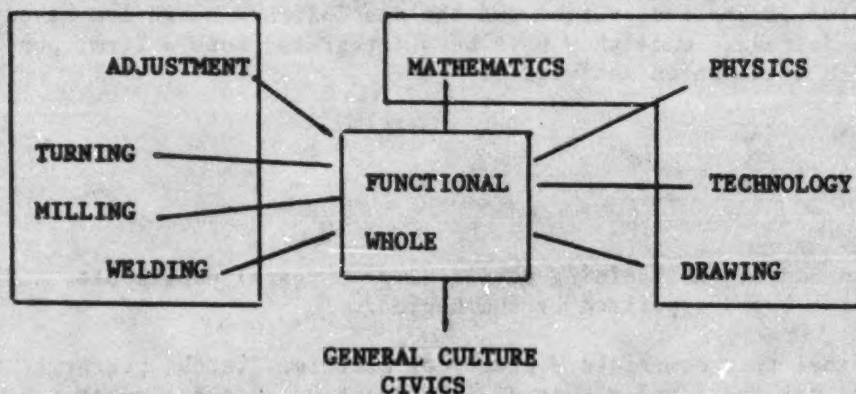
Formulation of working hypotheses	-	Search for supplementary information	-	Study, elaboration and interpretation of data	-	Checking hypotheses
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SCHEMATISATION OF RESEARCH IN THE CONTEXT OF POLYVALENCE

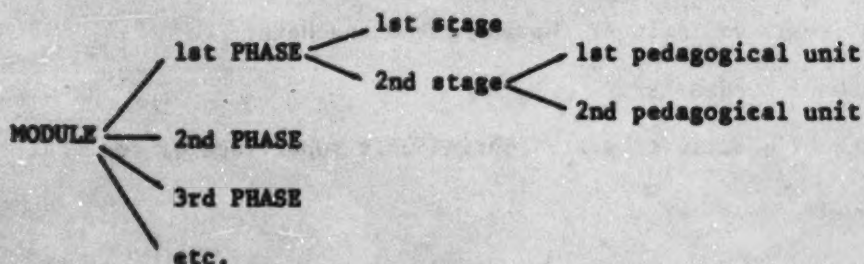
Motivation for study	-	Definition of the whole	-	Breakdown of the whole	-	Search for technico-scientific information
Study of hypotheses	-	Formulation of working hypotheses	-	Achieving the whole and interpretation of data	-	Checking working hypotheses (evaluation)

PLAN OF PRACTICAL DISCIPLINES

PLAN OF TECHNICO-SCIENTIFIC DISCIPLINES



- c. Almost all the vocational training centres have no self-instruction room. Only a number of specially equipped centres have carried out experiments to that end.
- d. The subdivision of the curriculum in our experimental centre is based on pedagogical modules which, in their turn, are divided into phases. It is then possible to subdivide each phase into pedagogical levels and units.



Naturally this organisation of the curriculum presupposes close co-operation by the whole teaching staff (teamwork) and group work by the pupils.

To avoid dichotomies between groups within each class, the former must be set up according to scientific criteria.

- e. Practical work constitutes "functional wholes". These consist of functional mechanical apparatus whose manufacture concerns at planning level, all technical and scientific disciplines at the implementation level the former turning - milling - adjustment - welding and carpentry laboratories. A more precise definition of these wholes appears in the documents attached to this questionnaire.
- f. At the end of the vocational courses, the system adopted opens up a wide range of employment possibilities and of mobility within the firm.
- g. Participation by the pupils in the management of the school is provided for through the school management committee. This committee, the committee of the institution and the disciplinary board are based on government decrees. Once they have been integrated into a firm, pupils take part in trade union activities.

1.3.3.

- a. At the end of the training period (2 or 3 years) pupils pass a final test before a board appointed by the Region.

The final test comprises a practical exercise (ie the performance of a mechanical task) and a general interrogation on the theoretical disciplines taught during the training period, ie: technology, drawing, mathematics, physics, general culture. This interrogation makes it possible to assess the pupil's standards and particularly his ability to co-ordinate disciplines. The examining board comprises:

1. an official from the Region as the chairman;
2. a member appointed by the employers' organisations;
3. a member appointed by the trade union organisations;
4. an internal commissioner chosen by the teachers;
5. the school headmaster.

The school's activities are continuously supervised by regional inspectors.

1.3.5.

- a. Every year the vocational training centre teachers take part in refresher courses lasting one month (participation is compulsory).

These courses take into account the various aspects involved in the training of a vocational training teacher, ie: the psycho-pedagogical aspect - the didactic methodological aspect - and general organisation.

Furthermore, during the refresher courses teachers of practical disciplines visit enterprises which are important from the scientific and technological points of view in order to be introduced to new technological processes.

Throughout the whole school-year meetings are also organised at regional level concerning specific problems (regional, technical and educational committees).

- 2.1. At the end of the third year of the secondary school the pupil is entirely free to choose his school. The choice is not left to chance. The pupils and their families can obtain information on the different types of schools. This information is provided by teachers at the secondary school who are able to assess the pupil's abilities and skills. It can also be obtained from special psycho-educational guidance centres. These centres employ psychologists and educationalists who can advise the pupils concerned on their future studies on the basis of a series of questionnaires and interviews with them. Regarding employment forecasting, we use the services of ISTAT and placement offices. At present there are many unemployed graduates in Italy and this situation has got worse following the economic crisis affecting the country.

Specialisation courses held each year also take account of the demand on the labour market.

- 2.1.2. Every year our vocational training school draws up statistics concerning the jobs held by former pupils - the type of employment, the distribution, etc. Furthermore, by means of a questionnaire sent to their homes, we receive suggestions concerning curricula, methodology and everything dealing with training. We then take these suggestions into account when planning training curricula for later years. This contact seems to us very important because it enables us to avoid as far as possible the unease generally felt by the pupil when he enters the world of work.

2.2.1. Guidance criteria are mainly based on behaviour tests and direct discussions with the pupils. Account is also taken of the curricula drawn up by the teachers at the schools formerly attended by our pupils.

2.2.2. Optional subjects do not exist at the vocational training centre and the pupil is obliged to follow the established curricula. When necessary, it is possible, subject to regional authorisation, to include in the curricula specific disciplines required by new technical scientific developments.

2.2.4. The school endeavours to programme its courses in the light of the percentage, now known by experience, of pupils who enter vocational training structures each year. However, the Ministry has great difficulties in providing extra funds.

3.1.1. Enquiries and visits paid to firms employing pupils leaving our vocational training centre show that the preparation is adequate to ensure good integration into the world of work.

The difference between a pupil employed immediately after completing his compulsory schooling and who has attended our vocational training school is considerable, not only from the manual point of view but also more generally in their approach to social and trade union problems.

Furthermore, sectoral mobility within the firm is possible for pupils from vocational training schools. That is why we believe that this system should be developed and improved.

3.2.1. We have no information because the experimental system was adopted only last year and accordingly the pupils attending experimental
3.2.2 courses have not yet been employed since they will only obtain their
3.2.3 qualification at the end of this year.

**B. THE "FERMO CORNI" TECHNICAL
INSTITUTE AT MODENA**

II. DETAILED REPLIES

The paragraphs refer to the numbers in the Council of Europe questionnaire

These replies were prepared under the supervision of Mr GHEDINSI, Director of the "CORNI" Vocational Institute and of Mr E FERRARI, Director of the "CORNI" Technical Institute

I. THE EDUCATIONAL SYSTEM (1)

1.1. Situation of the system to be observed and described

The primary vocational training qualification is obtained in Italy in 3 different ways:

- A. apprenticeship
- B. vocational qualification courses
- C. vocational institutions

A. Apprenticeship: Vocational training takes place in the enterprise and covers young people aged 15 and under 20. The law stipulates that the apprentice must attend supplementary education courses organised by the regions during working hours which are normally paid. Courses last for 3 years and cover a number of hours a week.

Apprenticeship is becoming increasingly less widespread. It now accounts practically for only a part of vocational training in the crafts and is scarcely of any importance in vocational training in Italy.

B. Vocational qualification courses, also managed directly by the Regions or, if they are free, nevertheless subject to their supervision, are designed to offer young people awaiting their first job vocational preparation in a number of sectors and retrain workers who are obliged or wish to change their trade.

Normally they last for one or even two years and take place in regional vocational training centres.

C. The State vocational institutions are in every respect second stage secondary schools. They follow compulsory schooling and are designed to offer young people general training which could enable them to pursue their studies and enter higher education or receive vocational training in the case of those not wishing to continue their studies but anxious to enter the labour market immediately after obtaining a vocational qualification or being able to acquire one easily in the enterprise.

(1) See the organigram at the beginning of the report (Table 1).

To be admitted to these institutions, candidates must have a lower secondary school (scuola media) leaving certificate. Studies last for 3 years and lead to the award of a vocational qualification diploma which has to be recognised by the employer as soon as the holder enters the world of work.

This diploma also permits the holder to enrol for 2 years higher training with a view to obtaining the vocational training diploma enabling him to obtain employment as a medium degree technician or enrol at a university without further examination.

After obtaining the vocational qualification diploma it is also possible to enrol, following an integration examination, in the fourth year of other second stage secondary schools. Access to technical schools of the same type is also facilitated, but admission to schools concentrating on arts subjects is only theoretically possible.

There are various types of state vocational institutions. They exist for agriculture, trade, industry, and the crafts, the catering industry, merchant navy activities, medical activities and there are also institutions for young girls.

The "F. Corni" vocational institution for industry and the crafts at Modena is a state institution organised as follows:

Headquarters at Modena: experimental courses (duration 3 years);
 evening courses for draughtsmen mechanics
 (duration 3 years) reserved for student
 workers.

Associated branches in the Modena province.

Finale: ordinary courses (3 years) for the following
 specialisations: assembler-mechanic and motor
 vehicle repairer mechanic.

Farsinoro: ordinary courses (duration 3 years) for assembler-
 mechanics.

Mirandola: ordinary courses (3 years) for assembler-mechanics,
 fitters, electricians and electro-mechanics.

Pavullo: ordinary courses (3 years) for assembler-mechanics.

Sassuolo: ordinary courses (3 years) for assembler-mechanics
 and industrial ceramists.

Vignola: ordinary courses (3 years) for assembler-mechanics
 and turner-mechanics.

The institution functions in co-ordination with the "F. Corni" industrial technical institution at Modena where studies cover 5 years and train medium-stage technicians.

The vocational institution has 1324 pupils. 535 pupils divided into 25 classes are enrolled in the experimental courses at Modena. The ordinary courses of the co-ordinated institutions in the province follow the curricula and study plans established by the Ministry of Education which are common to all similar institutions. Evening courses have the same study curricula as ordinary courses but with reduced timetables particularly with regard to practical work since these courses are generally reserved for adults engaged in vocational activities. The experimental courses which have been operational for 3 years now are the forerunners of a reform project for the Italian second stage secondary school based on a specific orientation. Preliminary conclusions will be drawn at the end of the year when an assessment will be made of the diploma-holders' training standard and the result achieved by pupils who have enrolled in the third year of the corresponding technical institution where studies last 5 years after 2 years of joint training.

1.1.1. Simplified general flow chart of the educational system in Italy (Table 3)

Plans exist in Italy to reform the second stage of secondary education, and so far agreement has been reached on a number of principles: the experimental courses in Modena are forerunners of certain aspects of a project for reform.

General flow chart of the present Italian education system

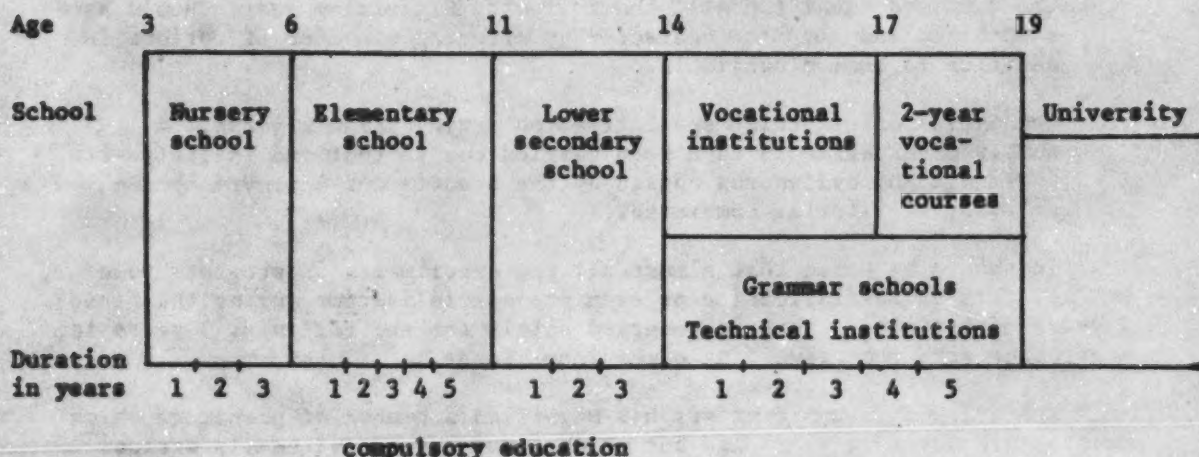


Table 3a

Flow chart for a possible structural reform

(project tried out in Modena between the ages of 14 and 17)

Age	3	6	11	14	16	19
School	Nursery school	Elementary school	Lower secondary	Joint 2-year courses	3-year unitary or differentiated courses	University Specialised courses
Duration in years	1 2 3	1 2 3 4 5	1 2 3	Qualification courses		
	1 2 3	1 2 3 4 5	1 2 3	1 2	1 2 3	1 2

Table 3b

Reasons for the planned system

Almost all those concerned with the future Italian school reform agree on the principle of the combined school period following the single lower secondary school with the possible extension of compulsory schooling in the near or distant future up to the age of 15 or 16.

There is a lack of agreement concerning the exact definition of the aims and content of that period.

But views do coincide however on the following points:

- contrary to the elementary and lower secondary school which will be the same and equal for all, the following 2 training years should have a combined and guidance character by offering a number of options in addition to common curricula.
- the exclusion of strict specialisation during these 2 years. A number of experiments have been carried out to that end in Italy with curricula and syllabuses chosen by the schools and approved by the relevant ministerial committee.

It should be noted that almost all the experiments in progress rule out any form of specialisation or even pre-specialisation during the first 2 years of training. This is reserved solely for the following 3 years in accordance with the prevailing educational ideas.

The present economic crisis has magnified a number of phenomena which existed already some years ago but which today are exceptionally serious (eg the high unemployment rate among young people, notably those with diplomas of education and university degrees, which contrasts with the scarcity of skilled or specialised workers in the most highly industrialised areas, notably in the crafts and small and medium-sized enterprises). The over-population of the university and the abandonment by young people of certain traditional trades, notably among the crafts. Thus the experiment carried out by the Corni Institution, which took these phenomena into account from the outset, has aspects which are extremely topical in Italy today.

The considerations underlying the experiment carried out by the Corni Institution can be summed up briefly as follows:

- a. Technology and science are vital component parts of modern culture and they must be given their rightful place in the basic school training received by all young people.
- b. In order to permit horizontal as well as vertical mobility at a later stage, specialised vocational training should not begin in the first year; on the contrary, it must be backed up by solid general training.
- c. Practical work must be included in the curricula for the second stage of secondary education for the sake of pupils who intend to pursue their studies and also for those who break them off earlier with a view to more thorough all-round training and in order to exploit to the full the abilities of adolescents between the ages of 14 and 17; the best age at which to acquire a specific manual skill.
- d. During the 2 combined training years it is essential to introduce a technological or practical option if only to permit those who so desire to become integrated into the world of work after a qualification course covering a reasonable time.
- e. The 2 years of combined training must place the emphasis on guidance in order to permit pupils to change their study plans.
- f. Whether education be compulsory or not, up to the age of 16 there must be a distinction between schools with a short, medium or long period of studies, in order to prevent vocational schools becoming progressively isolated into ghettos and the inflation of diplomas to the detriment of young people who, having chosen schools with a medium or long period of studies, have no option but to abandon such schools without being able to acquire vocational qualifications in a short time or pursue their studies until they obtain the final diploma.

Other general principles will emerge from the replies to the following questions in which we shall also consider the exact ways in which they can be implemented.

The structure of the "Corni" experimental vocational institution is as follows:

Two years of combined training (from 14 to 16, and in any case after the award of the lower secondary school certificate): the curriculum provides for a compulsory common core and optional subjects.

There are many options in the context of a possible school reform. Given the Corni Institution's traditions, characteristics, facilities and the economic needs of the province of Modena there are 4 technological options: mechanical, electro-technical, wood industry, graphic arts.

When these 2 years have been completed, the pupil can enrol in a further training course covering 3 years or attend a one year qualification course.

Third year. In our school a pupil who decides not to continue his studies may choose one of the following qualifications according to the requirements of the local economy.

Mechanical section: draftsman, mechanic, assembler, turner milling machine operator, motor vehicle repairer.

Electronic section: fitter, electrician and electro-mechanic.

Wood section: foundry pattern-maker.

Graphic arts section: compositor, typographer, printer, photolithographer.

At the end of the year the pupils sit for an examination for the award of their vocational qualification which is recognised by the State and the collective agreements.

1.2. The objectives in relation to the Montreux conclusions

The objectives have been partially set out under 1.1.2. From the exclusive point of view of vocational training they can be summed up as follows:

- concentration of basic training during the first 2 years so as to permit mobility within the school system and later in the vocation.
- solid and common general training for those wishing to continue their studies in order to promote vocational advancement and the return to educational institutions even after periods of vocational activity.

1.2.1. Grouping and concentration

- a. During the first 2 years distinctions are made not by qualifications but according to technological sections: mechanical section, electro-technical section, wood section, graphic arts section.

In the third year, qualifications are "concentrated":

- assembler-mechanic, groups together the 2 former qualifications of filers and also makes it possible to obtain at a later stage a qualification in an enterprise as a tool-maker or stamper.
- electrician and electro-mechanic which combines 2 formerly distinct qualifications.

- the qualification of "milling machine operator" also comprises the use of other machine tools making it possible to acquire at a later stage a further qualification in an enterprise (eg drilling machine operator).
- b. In the other non-experimental vocational institutions the choice of qualification is made in the first year. Qualifications are basically the same as those offered in the third year at the Modena Institution.
- c. Grouping during the first 2 years by section rather than by trade means that it is necessary for young people to become familiar with the various techniques and characteristics of the trades for the purpose of guidance and becoming aware of the fundamental uniformity in the basic theoretical and practical training for the various trades in the major technological sectors referred to above.

Information obtained from psycho-technical centres has shown that there is no a priori certainty regarding orientation towards a particular trade and that it is rarely possible to make a choice until after a practical training period revealing the various aspects of the trade concerned.

Other information has yielded data concerning the use of diplomas awarded by our institution which often show good integration into work in specialities close to those certified by the diplomas obtained.

The Ministry of Education had also begun in 1969 to group various qualifications in the state vocational institutions.

The method of grouping by industrial sectors is mainly based on the practice of covering the preparatory subjects in the first 2 years: basic technology and joint practical work (eg filing, turning and welding for mechanics).

- d. After a period during which qualifications increased in number due to industrial expansion, the opposite trend was observed around 1970 not only in Italy but also in other European countries.

Reference has already been made to the unification of qualifications by the Ministry of Education in 1969.

Our institution grouped qualifications in the graphic arts sector (compositor, typographer, printer-typographer, photolithographer) into one qualification "worker in the graphic arts" and to that end it contacted the provincial committee for the vocational teaching of the graphic arts comprising the local industries in the sector which supports the institution.

- e. As shown by the replies above, these groupings concern the whole range of training courses offered at the school. If we consider in particular the typical national qualifications (excluding non-typical ones

such as foundry pattern makers and industrial ceramists which exist only in the Modena institutions and are the result of specifically local economic characteristics and requirements) the following figures are obtained for a number of industrial sectors:

Number of official qualifications in state vocational institutions:

	1962	1969
Mechanical section	14	5
Electrical and electronic section	8	3
Graphic arts section	15	5
Textile section	4	2

Undoubtedly qualifications have been grouped to a greater degree in Italian vocational schools than in those of other European countries. In addition to the international vocational training competitions there are also "trade competitions" for which no specific education is provided in Italy.

- f. In view of the fact that unification took place on a national scale, all students in state vocational schools attend "concentrated" sections.
- g. The general principles governing state schools are established by the ministry. The outline law making the Regions responsible for vocational education is being drawn up. At the present time, whilst the Regions are fully competent for vocational training, which formerly came under the Ministry of Labour, and for free training as regards state vocational education, they only have a consultative status concerning the location and curricula of the schools. The Regions directly manage the funds permitting the application of the right to study (assistance, canteens, transport, etc); the Ministry of Education provides the schools with the appropriations necessary for their operation (expenditure on staff, equipment, supplies etc).

Vocational institutions have a legal personality and like all state schools are governed by a board comprising elected representatives of the teachers, the non-teaching staff, the pupils and their parents.

At the Corni Institution there is also a technical committee responsible for experiments and performing technico-consultative functions. It comprises the Chairman, representatives of the teachers, the parents, the municipality and the Ministry of Education. The committee can also co-opt technicians and experts. The experiment is supervised by the competent ministerial committee and the Directorate General of vocational education.

1.2.2. All-round training

- a. All training takes place in the school and comprises 38 to 40 hours of compulsory teaching per week according to the classes and the technological options. To these must be added the hours of optional teaching which may be as many as four hours per week per subject.

The following subjects are studied:

First two years of training

Common core (compulsory): 58% of the timetable. Subjects: Italian, history, foreign languages, rudiments of law and civics, mathematics, introduction to the physical sciences in the laboratory, physical training, religion (from which the pupil may be exempted at his request).

Optional field (one compulsory optional subject): 42% of the timetable. Practical work in the various options (54% of the time available). Theoretical and technical instruction in the various options (46% of the time available).

Mechanical option: mechanics, mechanical technology, technical drawing.

Electrotechnical option: electrotechnology, electrical measures in the laboratory, electric installations and drawing.

Wood industrial section option: mechanics, technology, technical drawing.

Graphic arts option: chemistry, technology, technical and artistic drawing.

Third qualifying year

Common core: 15% of the subjects: general culture, religion physical training.

Optional field: 85% of the timetable.

Specific practical work: 70% of the time devoted to the optional field.

Specific theoretical technical subjects: 30% of the time.

Subjects offered in the various sections:

Mechanical and foundry pattern making section (timetable adjusted in the light of the vocational qualification): mechanics, mechanical technology in the laboratory, fluid apparatus and laboratory (only for motor vehicle repair mechanics).

Electronics section: electrotechnology, electrical measures and laboratory, electrical installations and drawing, electro-mechanical construction and drawing.

Graphic arts section: applied chemistry, technology, technical and artistic drawing.

Pupils are divided into classes in the common core. Some classes form groups for the optional part and for foreign language study (French, English and German according to the language studied at the secondary school).

The optional activities are taught to groups of pupils from all classes and organised according to the pupils' demand and the school's capabilities.

At present these activities are as follows:

- sports
- supplementary technical drawing
- supplementary practical work
- mechanics applied to motor vehicles
- chemistry
- musical culture
- photography

- b. Physical training and sports are compulsory for 2 hours a week as in all other state schools. Much of the training is devoted to sports (during the winter, mainly volley ball; during the other months the main open-air activity is athletics). The institution has a gymnasium shared with corresponding technical institution and a room for a number of hours at the municipal sports club. It has no swimming bath because of the distance between the institution and the bath. It has no stadium of its own but may use the sports stadium in the same way as other schools as well as the municipal football ground.

In addition to the compulsory timetable, sports activities are organised in the context of the optional field. The institution organises volleyball tournaments between the classes, competitions for athletics, ski-ing and tennis, competitions between teams from related institutions and it takes part in the provincial tournaments in a number of sports organised between the provincial schools.

- c. There is no special teaching in the arts subjects. This takes place in the context of (compulsory) instruction in Italian and general culture or in connection with language teaching. An introduction to literature and the general literary language is given by class readings from the classics, encouragement to read privately thanks to the library, visits to museums, monuments and art exhibitions. This year a course in cinematography including film shows is being arranged in co-operation with the "Corni" Technical Institution and the municipal cultural departments. The syllabus for the graphic arts provides for a course in technical and artistic drawing applied to the graphic arts. A free course in photography is also included in the optional subjects.

In co-operation with the technical institution referred to above, in January this year we fitted out a room for film projections and musical shows which can be attended freely outside the school curriculum or used on the initiative of the teachers or the classes.

- d. This question has been partially answered in the preceding paragraph. By agreement with the municipal cultural departments pupils are able to attend, individually, activities organised by the municipal theatre, both events reserved for students and public shows (opera, concerts, theatre, ballet).

Participation is encouraged but is not very widespread, if only because most students live a long way out. Apart from a few rare exceptions, group attendance by all the institution's students at events has been almost completely given up because of negative results in previous years. We now prefer to encourage free participation either by classes or small groups.

- e. The institution organises class visits to local enterprises, generally in the context of optional subjects. The high transport and subsistence costs no longer make it possible to arrange for cultural visits and visits to enterprises for more than one day.

Visits usually take place in the spring. This year only one class went to Florence and a number of classes visited the local museums. As already stated above, visits are arranged to local enterprises and museums. Last year the opportunity given to a number of classes to attend hearings at the Modena Court aroused particular interest and was very profitable in the context of the syllabus for Law and Civics.

This initiative will be repeated and extended to other bodies during the year. All these initiatives are encouraged by the institution but not arranged for all concerned. The choice of these activities is left to the various class councils.

- f. The study of economic and social life forms part of the syllabuses for Italian, History, Law and Civics and (partly) religious education (social problems). Special optional courses are organised on topics of particular interest to young people.

g,h. The teaching of Law and Civics is compulsory during the first 2 years and comprises 2 hours a week. Teaching continues in the third year in the context of the subject entitled "General Culture". The subjects referred to under g. and h. are taught in these disciplines and also during the Italian and History courses. Active participation by the students in the running of the school, provided for by law for all state schools, contributes towards the information of the citizen. Students have one day a month in their normal school timetable to meet freely and discuss general or specific topics. Pupils are quite free to organise the election of their representatives to the collegiate bodies (drawing-up and presentation of lists, candidates, electoral campaign etc). The school provides the pupils out of school hours with premises for meetings and panels to post up notices.

1. Syllabuses for technological and scientific subjects are kept up to date and practical work is backed by technical installations which are adequately modern from the educational point of view.

1.2.3. Preparation for mobility is one of the basic hypotheses which the experiment in progress is intended to check. It is still too early to draw any conclusions.

1.2.3.1. Horizontal (sectoral) mobility

a. Within the system

- 4 choices are offered in the first 2 years and it is only in the third year that it is possible to choose a speciality in the context of the option selected.
- It is possible to change options during the first 2 years because of the orientation of this stage in studies. Specific measures facilitate the pupil's integration during the year into a new option (personalised teaching for such pupils and special classes).

To facilitate the choice of option before the beginning of the school year (during the second half of September) meetings and symposia are organised with the pupils and their families at which the teachers describe the characteristic features of the options and the different trades. The school also provides pupils and parents with information about possible outlets of further studies. This year, most changes in options, particularly for the lesser-known sections in wood and the graphic arts, took place between the time of enrolment (July) and the actual beginning of classes (October) after such meetings. A very small number of changes of options or specialities take place early in the year.

b. Sectoral mobility after initial training

Mobility after initial training is possible thanks to regional retraining courses or evening courses in the same state school. Grouping of specialities in the first 2 years of training should facilitate mobility. Accordingly, a student who has opted for Mechanics during the first 2 years and then chooses a speciality, can enrol without any examination in the third year for another speciality in Mechanics or sit as an external candidate for the examination leading to another qualification by passing only the tests in subjects or some of the subjects which differ from those he has studied. Regarding permanent education, the collective agreement provides that a worker can devote 150 hours per year to his cultural or vocational retraining.

Furthermore, it should be recalled that state evening classes are provided for workers, mainly organised outside working hours, which enable them to study for qualifications at all levels.

All diplomas obtained in the context of regional or state courses for workers are fully recognised by the State and the collective agreements.

1.2.3.2. Vertical mobility

- a. On completing their second year, pupils in the institution can enter the third year in any upper secondary school, where appropriate after an entrance examination in a number of specific subjects peculiar to the new school (eg Latin and Greek for classical grammar schools or Latin for scientific grammar schools). If a pupil wishes to continue his studies at the Industrial Technical Institute he will not be required to pass any examination provided he has successfully attended the optional course in Chemistry; otherwise he will have to pass a Chemistry examination.

After the award of the vocational qualification (third year), transfer to the fourth year in other types of schools is possible provided that entrance examinations are taken, but it is more difficult because of the large number of tests. It is easier to enter the fourth year in the Industrial Technical Institute offering the same type of course, provided this only involves a single examination in Mathematics and Italian. It is also possible to continue studies without examination in the fourth year of certain vocational institutions with a view to obtaining the technical education diploma (second stage) after 2 years, which also permits enrolment at the University.

This year, 15% of the successful pupils who completed the first 2 years in our institution enrolled in the third year. 18% of those with a vocational qualification continued their studies (this percentage concerns the school year 1975-76 and should be reduced next year with the introduction of a bridge after the first 2 years).

To enable workers over school age and possessing a vocational qualification to take the entrance examination in Italian and Mathematics in order to enrol in the fourth year of the Industrial Technical Institute, preparatory evening courses are organised at the corresponding technical institution.

- b. As already stated, there are a number of possibilities for state advancement courses at other educational institutions and their characteristics are similar to those referred to under a.

1.3. Material organisation

1.3.1.

- a. The minimum age for entry to the state Vocational Institution: 14 years and over.

Conditions: the lower secondary school diploma (completion of compulsory education).

Reference has already been made under 1.1. to other types of vocational training.

- b. The duration of training in state vocational institutions is normally 3 years. For certain agronomy courses it is 2 years and for others (eg assistant in the medical professions) 4 years.

It is uniform for all. The pupil may interrupt his training or specialisation at the end of each year and it is not possible to repeat each year more than once.

- c. Training is full time in the institution.

- d. The vocational school has its own administration (the operational funds are provided by the Ministry of Education).

The institution's premises are provided by the municipality in pursuance of the law.

Appropriations needed for the application of the right to study (assistance, canteen, transport) are granted by the region.

1.3.2. Organisation of teaching

- a. In the context of the common core, the classes taught consist of from 20 to 25 pupils. A number of first-year classes sometimes have more pupils and some third-year classes are smaller in number.
- b. In optional subjects, classes comprise in principle from 20 to 25 pupils, but in a small number of subjects some classes have fewer than 20 pupils. Numbers vary in classes for optional subjects but in general they are not more than 25. Practical and laboratory work take place either individually or in groups under the supervision of a teacher.
- c. There is no programmed self-instruction.
- d. Practical work is in part exclusively didactical, but in general it corresponds to work in an enterprise. In some cases (eg motor-vehicle repair mechanics) work is even taken on for outside customers or to meet the school's needs.

Coexistence with the Industrial Technical Institute (for second stage training) makes it possible to reproduce in our institution and for certain techniques the complete production cycle which is rarely present in a single enterprise so that both types of training in the first and second stage are integrated by reproducing the situation in industry itself. For instance, by means of a number of different subjects, the pupil passes in the Mechanics section from the general design of the mechanical part to the actual production of the model, the assembly and use of machine tools and technological-type experiments on the product.

- f. According to a number of enquiries, the horizontal and vertical mobility of those who have received our diplomas is certainly due to the solid basic training given to them.
- g. As in all Italian educational institutions, the students take part in the management of the school in accordance with the law.

1.3.4. Complete description of a curriculum

Mechanical qualification

Period from 1 October to 15 June - qualifying examination from 15 to 30 June.

<u>Common core for all branches</u>	<u>Number of hours per week</u>		
	<u>1st Year</u>	<u>2nd Year</u>	<u>3rd Year</u>
Religious instruction	1	1	1
Physical training	2	2	2
Italian and History	6	6)	3
Law and Civics	2	2)	
Foreign language	3	3	-
Mathematics	6	4	-
Introduction to the Physical Sciences and work in the laboratory	3	3	-

Optional field common to mechanical courses in the first 2 years

	<u>1st Year</u>	<u>2nd Year</u>
Mechanics and Technology	3	4
Mechanical technical drawing	4	4
Practical work:		
Welding	1	2
Turning	3	4
Filing	4	4

Subjects specific to the third year for the qualification of
Assembler-Mechanic

	<u>Number of hours per week</u>
Mechanical technical drawing	4
Mechanics, Technology and technological laboratory	6
Practical work:	
work on the bench	21
use of machine tools	3
welding	3

Vocational profile

The Assembler-Mechanic is required to:

- know how to interpret a technical drawing carried out according to the UNI standards
- know how to execute a simple mechanical drawing according to these standards
- be familiar with the parts of the machine used and the relevant technology and in particular those relevant to his future vocational activity
- be familiar with the main mechanical and technological tests on metals and the most current methodological controls;
- be able to make, on the basis of a drawing given to him or produced by himself, a mechanical part or a part of that part which must be produced on the work bench or by using the main machine tools and requires simple welding operations.

The worker must be able to handle and sharpen his tools and carry out the day-to-day maintenance of the machines used.

a. Number of staff required

In view of the fact that in Italy every state teacher is required to teach for 18 hours per week (in addition to the hours devoted to out-of-class activities), and that the teaching of Physics and the technological laboratory requires the presence of a teacher and a laboratory assistant, the teaching hours per week for teachers in each of the classes are as follows: 41 hours in the first year, 42 in the second, and 42 in the third: is a total of 125 hours for the mechanical sections. This figure varies slightly according to the section so that an acceptable average would be 126 hours of instruction for 7 teachers during the 3 years of study. In addition to the teaching staff there are the non-teaching personnel (directorates, administration, technical and service staff) whose total number is based on the number of classes, in accordance with the law. The average is slightly under 4 persons in this category for each 3-year course.

- b. By contrast with the earlier system, costs have not risen considerably and today it is true to say that each pupil costs the State and the local authorities (municipality and Region) on average slightly over 700,000 Lire per annum.

The fact that the Modena Institution shares the premises and the facilities with the Technical Institute reduces its operational expenditure. Clearly this has no effect on the cost of staff which accounts for more than 90% of expenditure. Since the system is still in the experimental stage it is not possible to draw final conclusions. A preliminary evaluation was carried out at the end of the school year 1975-76 covering the first 2 years of study and was extremely encouraging; another will be made at the end of the present year.

1.3.5. Teacher-training

Since these are state schools, the training and recruitment of teachers is governed by the general criteria applicable to all Italian schools. The technical teacher is required to have a university training (degree) and a diploma of education. Teachers for practical work are required to have training up to the second stage of the secondary school (industrial technical certificate). Permanent posts are filled by means of national competitions; recruitment for other posts is based on a list established at provincial level and the successful applicant is given either an annual or an indefinite contract. 53% of the teachers in our institutions are permanent.

The institutions can ask for the secondment of staff from other establishments if they are particularly competent in the new educational technologies. We have made some use of this possibility in recent years. Last year all teachers provisionally attached in this way requested and obtained their permanent secondment to the school.

Refresher courses for teachers take place outside the institution by means of courses specially organised by the Ministry and, in the case of Physics, courses are arranged at the local university. Within the institution refresher courses take the form of lectures, seminars and meetings between teachers and in co-operation with the similar technological institution and industry. In this connection mention should also be made of the possibility for contacts with vocational training systems in other countries since the institution represents the Ministry of Education on the International Committee for Vocational Training and Competitive Examinations.

However, the problem of refresher courses for teachers has not been completely solved although the remarkable stability of the teaching staff in recent years makes it possible to be more optimistic about a solution than in the past when staff mobility was very high.

During ministerial refresher courses, members of staff are released from their teaching duties and receive their normal salary.

2. THE INFORMATION SYSTEM

2.1. Knowledge of the employment situation (forecasting)

2.1.1. The institution acts in co-operation with local bodies in 3 ways in order to provide information about the school's characteristics and the various trades:

- information for secondary schools for the purpose of school and vocational guidance by providing curricula, statistics and vocational profiles;

- information for the families and pupils already enrolled in the school before the beginning of classes (from 15 to 30 September);
- periodical surveys of the situation and characteristics of the employment of former pupils the results of which are made known to the public and secondary schools.

Regarding forecasting, the institution keeps in touch with workers' and employers' organisations and the provincial labour office.

There is also a provincial school and vocational guidance centre which can be consulted free of charge by pupils and teachers.

Regarding the Graphic Arts section, the institution is associated with the Ente nazionale per l'Istruzione professionale grafica, an association of industrialists and workers in the sector which provides technical advice and also educational material.

- 2.1.2. Particular attention is paid to the opinion of industrialists when preparing curricula and examinations. Accordingly, the final qualifying examination board comprises 2 experts from outside the institution in accordance with ministerial regulations.

- 2.1.3. That does not mean that there are institutionalised committees at national level for every subject. New rules provide for the setting up of regional committees comprising representatives of the various professional categories.

At the present time there is a (national) Supreme Education Council representing teachers and headmasters from educational institutions ranging from the elementary school to the university and ministerial technical bodies whose opinion the government is required to seek although it is not compelled to follow it.

As already stated, for the duration of the experiment a committee has been attached to the Ministry comprising educational, technical and administrative experts, some from outside the administration.

The Regions have full powers regarding the activities of vocational schools and they are required to give their opinion as to the conformity of these activities with regional economic planning.

Next November elections will be held for the national and provincial educational district councils representing the educational, economic and political authorities and the pupils' parents.

These councils' main tasks include educational and vocational guidance.

As already stated, the Italian state schools have been responsible for their own management for the last 3 years. The school is governed by an electoral board comprising representatives of the teaching and non-teaching staff and the pupil's parents. This board is even competent to deal with guidance questions and may launch experimental initiatives.

2.2. Choice of speciality

It should be noted that in Italy guidance is not binding at any stage of education and, beyond a certain stage, the pupil is free to enrol at any school if he has the necessary qualifications. At the present time thought is being given to the possibility of restricting admission to certain university faculties, whilst regarding the second stage of secondary education the tendency is to introduce a selective guidance system in place of the present selective system, based solely on examination results.

2.2.1. At school (on entry into the system)

This question has partly been answered under item 2.1.1. in that information cannot be separated from guidance.

It should also be noted that on completion of compulsory education, the teachers' council is required by law to provide every pupil leaving the school with an educational and vocational assessment in writing. This assessment must be provided, but it is in no way binding on the pupil. Subjects enabling teachers and pupils to make choices are available during the period of compulsory education. The teaching of "technical application" and "technological education" in the secondary school is extremely important for any school. On the whole the psycho-technical tests used until recently have been abandoned because nowadays they are no longer regarded as having any real scientific value.

Tests carried out some years ago by Madrid University on "national samples" from a number of trades presented at the international vocational training competitions at Gijon (Spain), in which the institution took part, and intended to provide a psycho-technical pattern for the various trades, do not seem to have produced convincing results. Accordingly it is hardly possible to attribute any scientific value to "objective" tests based, not on a detailed standardisation of the various trades - which does not exist - but on the personal hunches of psychologists. Our institution's attitude towards educational guidance which is widely shared not only in Italy but also abroad is that this should in essence take the form of "self-guidance" by the adolescents based on information and advice given by the school and practical work, together with an introduction to technology.

2.2.2. Method of guidance

During the period of study, one of the teachers' and the class council's main tasks is to promote guidance by advising the pupil where appropriate to change options or attend support courses organised by the institution. Optional subjects also have an important influence on the choice of subsequent studies or specialisation after the first 2 years of training. Responsibility for guidance is placed in the hands of a teacher acting as "educational counsellor", who has attended the appropriate courses. In some special cases or even in general matters, the school may consult the provincial Vocational and Educational Guidance Centre, a local technical body, free of charge.

It should be recalled however that the experiment launched by this institution is aimed both at training and guidance, and this is constantly taken into account during the 2 years of general training, although we set out to make the pupil responsible for his own guidance, and the school does not and could not impose choices on him since that is prohibited by law.

2.2.3. The institution does not have any up-to-date and detailed statistics on the proportions asked for in the questionnaire concerning guidance towards various types of professional training.

These might be obtained from the Ministry of Education.

Regarding industrial vocational education in the Modena province, the balanced relationship (ie taking into account the varying duration of the 2 courses) between those enrolled at the 2 schools has been about 1 : 1 for a number of years. That relationship is clearly abnormal in view of the needs of the local economy which, like all the rest of the region and Northern Italy as a whole, is experiencing a situation whereby large numbers of young graduates are unemployed whilst there is a scarcity of qualified staff with lower diplomas and a sound basic training. To remedy that imbalance and in order not to adopt a numerus-clausus type solution, the institution has submitted to the attention of those responsible for preparing the forthcoming reform of the secondary school its own 2-year combined training system replacing the various existing streams.

2.2.4. The only way of adjusting supply to demand is based on information and guidance which, however, as already said, is not binding.

There is no problem of excess supply in our institution.

- 2.2.5. We have already described the organisation of the guidance system under other items. There is not a single body, but a number of bodies take part.

Recently the Regions were made responsible for vocational education and they deal with this matter in the context of economic planning.

In Emilia there is already a psycho-educational regional centre which, it is thought, will also deal with the problem of guidance.

3. THE RESULTS

3.1. Qualitative indicators

- 3.1.1. It is now generally agreed in Italy that in the forthcoming reform of the secondary school which will follow the one now in progress for compulsory education, it will be necessary to eliminate the "organ-pipe" structure which forces young people between the ages of 14 and 15 to make a choice which may be decisive for their career and can be changed only at the expense of considerable time and a high cost, notably to society.

Everybody, including professional circles, is fundamentally in agreement that there should be a combined (and not a single) orientation school offering a basic preparation and a technological initiation permitting "lateral exits" in the form of vocational qualifications at different standards or the continuation of studies up to university standard.

Differences appear as soon as attempts are made to give concrete expression to these ideas in curricula, notably regarding the function of vocational education in the new school. According to experiments carried out over a number of years in several Italian schools our institution's curriculum is the one which places the greatest emphasis on vocational education in the first 2 years of training (the third year anticipates first stage vocational training) and, although at the outset (3 years ago) educational and political circles were very reserved about our curriculum, today it is regarded with more interest and sympathy.

- 3.1.2. Everybody agrees that by contrast with traditional training, vocational training as tried out in our institution permits:

- a better basic training and therefore
- better adaptability
- a greater possibility for vertical and sectoral mobility

- regarding the degree of vocational preparation at the end of the third year, it is not possible to draw any firm conclusions in view of the fact that the first diploma holders under the new system will not enter the labour market until next June. In any case, from the strictly vocational point of view, preparation should not be less than it was before.
- whilst remaining experimental, the system is extremely flexible and adaptable to the development of requirements and can be changed even annually.
- every vocational school inevitably encounters financial obstacles (particularly regarding the renewal of equipment).

3.2. Quantitative indicators

It is not possible to provide comparative statistics for vocational training because, as already said, the first experimental 3 years' stage will be completed next June.

TRAINING FOR SKILLED WORKERS IN NORWAY

The numbering of the replies is the same as in the Council of Europe's questionnaire. There are no introductory remarks.

1.1.1 See Table 1.

1.1.2 The educational system as regards education and training of 16-19 year-olds aims at giving the young people the opportunity to choose whatever career or profession they want. Although building on the 9 years of basic education, the aim of the new secondary school is to enable young people to continue their education from the level at which they finished in the primary school.

The new Act came into force on 1 January 1976.

Until 1981, the old and the new systems will exist side by side.

The Act offers the opportunity of a further three years of education. Up to now this has applied only to the upper general secondary school for 16-19 year-olds, but it is now the official policy to strengthen the vocational side. To obtain this, extra resources are given by the state so that approximately 2/3 of the new school places are being created with the vocational streams.

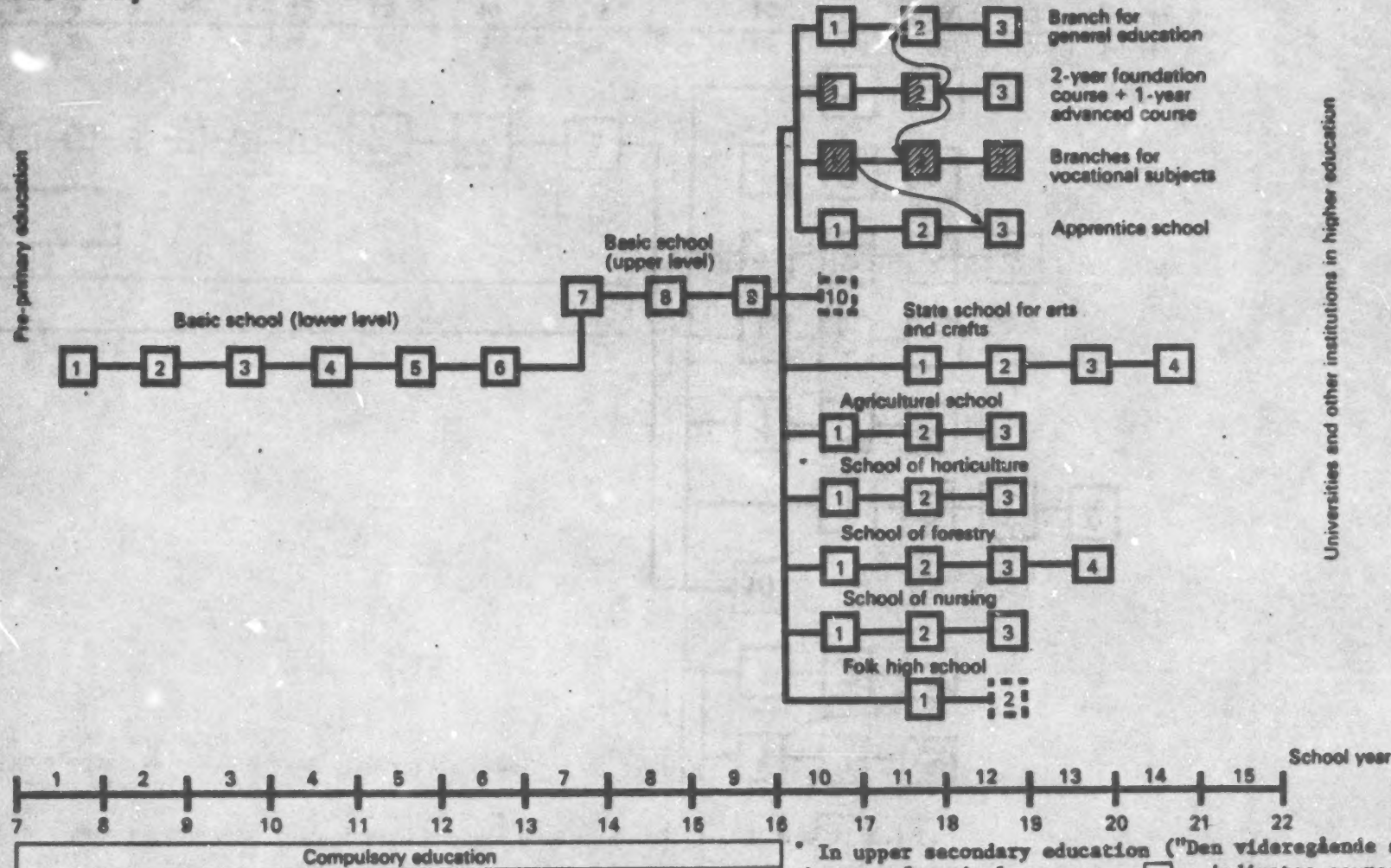
1.2.1 Grouping of "concentrated" vocational families.

- a. In 1976, a Royal Commission submitted two proposals for the reorganisation of vocational training, and for co-operation between schools, industry and handicrafts.

The commission proposed that the basic vocational training should be grouped into;

- mechanical trades
- building trades
- electrical trades
- printing trades and photography
- nutrition trades

Norway

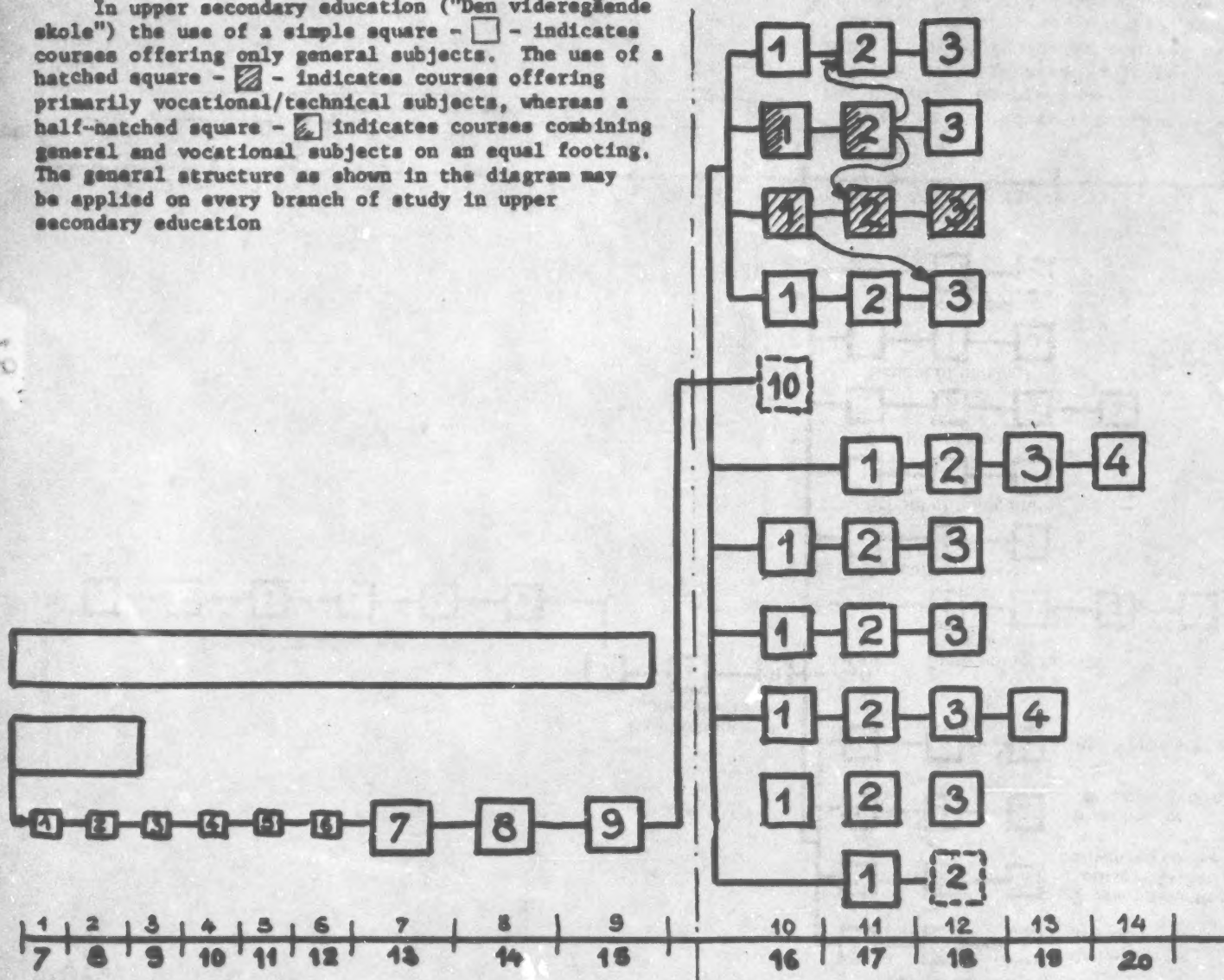


* In upper secondary education ("Den videregående skole") the use of a simple square - - indicates courses offering only general subjects. The use of a hatched square - - indicates courses offering primarily vocational/technical subjects, whereas a half-hatched square - - indicates courses combining general and vocational subjects on an equal footing. The general structure as shown in the diagram may be applied on every branch of study in upper secondary education.

Table 1

In upper secondary education ("Den videregående skole") the use of a simple square -  - indicates courses offering only general subjects. The use of a hatched square -  - indicates courses offering primarily vocational/technical subjects, whereas a half-hatched square -  indicates courses combining general and vocational subjects on an equal footing. The general structure as shown in the diagram may be applied on every branch of study in upper secondary education

NORWAY



- chemical and process technical trades
- technical drawing
- practical aesthetic trades
- social and nursing
- tailoring/dressmaking and textiles trade

The commercial and clerical fields were not discussed by this commission.

b. Comparison with former nomenclatures.

The names of the concentrated families correspond to the previous expressions, but the families include, of course, a variety of specialities.

c. As mentioned above, the proposal has only recently been put forward and at present we have introduced it only into some branch families. Within the mechanical field, however, the system has always been in force, with a rather general introduction in the basic year and a wider range of specialisations taking place in the second year and during the period of apprenticeship within a plant/industry.

The Royal Commission in its second report put forward proposals for changing the structure within the trades, and on how the combination school/industry in the training could take place.

d. The proposal has been submitted to the various trade organisations. The Ministry has not yet finally approved the various proposals, but it is expected to adhere to the general view of the Commission. A somewhat wider range of concentrated vocational families than originally planned is, however, anticipated. Some experiments within, for instance, the building trade have been carried out.

e. The main part of industrial and handicraft training will be affected by these groupings.

f. It is expected that the majority of young first-stage trainees will be affected by these combinations. It will in any case take a considerable time before being put into practice as the new broader training will demand more expensive equipment and larger premises than before.

g. The guidelines are laid down by the Ministry but the Advisory Council on upper secondary education as well as the Council on Apprenticeship Training will be heard beforehand. The attitude of the vocational organisations will be of vital importance.

- 1.2.2 In the 1-year basic course, 35 hours'lessons are given per week over 38 weeks. The joint general subjects are 2 hours in Norwegian and 2 hours in athletics. 1 hour is devoted to mathematics and 1 hour to physics/chemistry specially suited to the pupil's choice of craft.

The weekly time-table for the basic 1-year course in metal works as follows:

<u>Joint general subjects</u>	<u>Weekly hours</u>
Norwegian and civics	2
Athletics	2
<u>Vocational subjects</u>	
Practical work	20
Vocational theory)	7
Vocational drawing)	
Vocational mathematics	1
Vocational physics/chemistry	1
Optional subjects or strengthening the vocational subjects	2
	35

The pupils have 2 hours per week free for options, either in subjects connected with their choice of trade or within a particular field of interest in which the school offers study opportunities.

Cultural visits may depend on the geographical position of the school.

Visits to firms may be arranged at the end of term.

Some teaching of economic and social life is available and includes knowing something of the rights and duties of the citizen and the producer.

Teaching about the structure and system of the various trade unions is given in the school. The pupils are encouraged to take part in various activities and advisory boards at the school and they are also represented on the school's steering committee. These activities should be considered as preparation for later decision-making.

The authorities try in various ways to adapt the training to technical innovations. The machinery of the school is kept up to date, the teachers are given opportunities for in-service training and the possibility of obtaining occasional jobs in industry.

1.2.3.1

- a. In principle, this is one of the aims of the new Act on upper secondary education. With the introduction of the so-called 2-year combined course - where the student receives general education equivalent to the first year of the general stream - as well as the basic year, it is possible to change direction during training.
- b. Sectoral mobility is facilitated as the training is offered throughout the whole country.

The various labour exchange offices facilitate this mobility by offering special grants for families who wish to move from one area with high unemployment to another area where there is more demand for labour. There is, however, a tendency to discourage movement away from less populated areas, by various incentives which aim at expanding and promoting industry. This is done by special grants to vocational courses.

1.2.3.2

- a. Under the terms of the new Act on adult education, it will be possible to subsidise training within or in connection with the company. Furthermore, for a long time, various courses specially suited for adults in their freetime have been available in ordinary schools.

1.3.1

- a. The pupil usually enters the vocational schools after leaving the basic school at the age of 16. After having finished the basic 1-year course, they may try to obtain a position as an apprentice with a company.

The duration of training is usually three years, but may in some crafts be four. The year(s) spent at school are deducted from the period of apprenticeship.

The training in schools is fairly uniform as is the training in the workshop, but certain differences do occur owing to the different products in the various firms.

The training up to skilled-worker level may take one of two ways - either complete practical training in the workshop with obligatory theoretical education in the municipal apprenticeship school, or by attending a vocational school for one or two years and then continuing as an apprentice in the apprenticeship school if the student has only had one year of basic education.

- 1.3.2 The maximum number of pupils per class in the first year is 15 and 12 in the second and third years.

Resources rooms with self-instruction are not usual. In some crafts - eg car mechanics - they are in more common use.

The teaching is organised in units corresponding to study years. This is a general principle in the new Act on further education that each year should be a conclusive unit, so that the pupil is free to leave at the end of each year.

The practical work at the basic stage is rather traditional. The curricula are, however, revised by groups consisting both of teachers and representatives from industry in order to ensure that the practical work is as closely related to industrial practice as possible.

Within the framework of the curricula, there are possibilities for teachers to practice a certain degree of self-management, especially in the second and third years, but this involves them in a considerable amount of work. In some trades, the teaching may to a certain degree differ according to the work available, ie car mechanics, machine tools, etc. The teachers are informed through seminars and courses of the developments within their trades.

- 1.3.3 The craftsman's test, which applies to practical work, is taken as a final examination. The examinations at the apprenticeship schools are taken at the end of each school year.

- 1.3.4 In the basic year, 4 weekly hours are allocated to common general subjects (Norwegian and athletics), 20 hours to practical work, 9 hours to vocational theory including mathematics and physics, and 2 hours to the choice of the pupil.

The teacher in practical work has, at present, to teach 29 hours per week and the teacher in theoretical subjects 24 hours per week. Generally the same teacher covers the 20 hours in practical work as well as the 9 hours in vocational theory. A Royal Commission has proposed that the number of weekly hours be fixed at 26 hours per week. Negotiations are pending.

- 1.3.5 To ensure that teacher training keeps pace with innovations, the school authorities arrange courses for the teachers. Some of these courses are arranged by the State Institute of Technology. The Pedagogical Institutes for Vocational Teachers also arrange seminars for special groups of teachers, and it also runs long-term courses in some subjects which may bring the teachers up to the same level as university-educated teachers in general subjects.

In addition, there are a number of short conferences and meetings for teachers working within a special craft. An example is teachers of hairdressing, where nearly all teachers in the whole country have, over the last few years, regularly attended courses lasting a week arranged by the teachers themselves in co-operation with the Pedagogical Institute for Vocational teachers and the respective trade organisations.

- 2.1.1 The new Act on upper secondary education has brought this problem in a new light. It is a basic principle of the Act that the county is responsible for the form of this education. The plans for new schools are decided by the county, and although appeals against the county's decision may be made to the Ministry, the Ministry can only express its view on the matter - not decide.

Another basic principle is the right of the pupil to decide for himself the choice of stream he wishes to follow. At present, this is not always possible because of a lack of vacancies. But this principle may, in reality, lead to a number of students taking a stream of study where the possibilities of finding work are low or more limited than the number of students finishing their examinations.

Advice is given on finding work by teachers in basic schools and the Labour Exchange Offices. In addition, the vocational teachers naturally give information on the employment situation.

When the establishment of new streams within vocational education is being considered, advice is sought from the labour authorities of the county.

New fields will also be subject to scrutiny by a committee and the proposals dealt with by the respective trade organisations, as well as the advisory state school boards and the Ministry of Education.

The forecasting of the employment situation meets the same difficulties as in other countries. It is almost impossible for industry to specify their demands for the various fields for five to ten years' time. The situation after the oil findings in the North Sea is new and extremely difficult to predict. It will have profound effects, but in what regions and within which branches is hard to judge in advance. The open question of when the drilling north of 62° latitude will begin is also to be considered.

Even forecasting for the next few years is very difficult to make. The Swedish authorities try, however, to encourage industry to keep up their training programmes although the actual production may seem insecure.

- 2.1.2 It is a firm principle that changes and determinations in curricula should be taken in close co-operation with the executors of practical work. Qualified workers are therefore elected by the trade unions as their representatives on the boards which draw up the curricula.

They will also be appointed as members of the respective trade committees of the vocational upper secondary schools. These boards give advice on the purchase of equipment and machinery, and should also participate in the organisation of the teaching.

The examination boards for the final tests as craftsmen are made up of representatives of the various organisations, and qualified workers are appointed as members.

- 2.1.3 In vocational education, it is usual that committees on curricula, teacher training, evaluation, etc be made up of representatives of employers, employees, teachers and advisory boards.

In Norway, the committees are institutionalised through the Advisory Council for upper secondary education. Attached to this board are a number of sub-committees consisting of a wide range of representatives of employers, employees, teachers and students.

In addition, informal committees with the same kind of membership may be established on an ad hoc basis.

- 2.2.1 Information at school is given in the form of various pamphlets issued by the Directorate of Labour. Other information brochures are printed by the local labour offices and labour organisations. Teachers giving vocational guidance may attend special courses, but the guidance is confined to rather general surveys. More detailed information can be found in labour offices.

Guidance and selection are given as a recommendation only.

- 2.2.2 According to the Act concerning upper secondary education, the school is obliged to try to find another suitable educational place, if the pupil has difficulties in keeping pace with the education he has chosen.

According to the level of the student, he may choose a different number of hours per week for optional subjects. The choice may either be to reinforce his main subjects or something different.

- 2.2.3 We have very few data as to the proportion of trainees whose first employment is in the field covered by their initial training. That will differ in the various professions, the proportion will be smaller in more female professions like domestic science, dressmaking, etc, but higher in professions like plumbing, radio and television repairs. In iron and metal industries approximately 60% of the leavers from the one-year basic course continue within their field.

- 2.2.4 It is very difficult to say how the supply is adjusted to meet demand as Norway has a free labour market.

If one refers to the situation created by the North Sea oil beds, new demands for labour were met by industry offering higher wages in order to attract more labour. On the other hand, a certain recession in other branches, such shipbuilding, has meant that it has not been difficult to supply the labour demanded.

The workers' training is kept up-to-date by various courses. The Labour Directorate is authorised to arrange courses with pay, if the plant needs to give its workers a new training in order to deal with technology. The mobility is enhanced by the various subsidies given by the Labour Directorate in the form of a moving subsidy, and full pay during training for a new job.

- 3.1 It is thought that pupils are better trained than before. But it will always be difficult to evaluate the results, because the contents of the training change. There is the same problem as in general education when parents and others complain that the pupils lack knowledge of this or that, while often the truth is that their knowledge is different and not necessarily less than before.

The aim of the new wider training is to make the pupils more adaptable to technological changes. This has, however, met with a certain disapproval of some left-wing youth organisations who maintain that the training should be as narrow as possible in order to avoid the students being used by industry outside their real profession.

The system is being developed and it is too early to say anything definite about the results.

- 3.2 As mentioned above, the system of a broader vocational basic training has only just started. It is therefore not possible to produce any comparative unemployment rates for persons trained under the two systems. Neither have we any data as to the comparative average length of employment for the same categories.

The main reasons for the new system are the greater possibilities for change and mobility necessitated by technical development and innovations. It will also make it possible to spread out the initial training to a greater degree than before. There is thus a certain danger that local politicians will use this system for offering a very small range of crafts in several small places, and in that way limit the choice for the young person. The young person (or his parents) may choose a profession in which a training is given at home, and takes the opportunity for work much less into consideration.

Industry is interested in the system because when it is necessary to change from one line of production to another, the worker already has some basic knowledge of his new trade.

Some of the left-wing youth organisations are opposed to the broader training because they find it too simple for industry to shift from one type of production to another without due consideration being given to the workers. They also stress the point that they want to keep and protect each person's own trade.

The unemployment rate in Norway is very low. At the end of November 1976 only 18,000 unemployed were registered - which means 1.2% of the total labour force.

For the whole country, 16.3% of the total number unemployed were under 20 and 16.4% were between 20 and 24 years of age. Respectively 18.5% and 17.4% of these groups were women.

Compared with other industrialised countries the number of unemployed is therefore very low although it is a growing problem.

TRAINING FOR SKILLED WORKERS IN SPAIN

I. FOREWORD

Situation of the system to be observed and described

The current educational system in Spain derives from the General Education Act of 4 August 1970 and its supplementary provisions. The new system has come into operation progressively starting in the academic year 1970-71.

The Spanish educational system is characterised by the principles of unity, flexibility and interrelationship and at the same time it provides a large number of opportunities for life-long education. The actual situation conforms fairly well to these general principles although in some specific fields, eg life-long education, it has not been possible to achieve the objectives of the Act. It should be added that, within this general scheme, after the conclusion of the period of general elementary education, openings for vocational training are always available as well as the possibility of re-entering the educational process at every stage of life, so as to satisfy modern society's requirements for life-long education.

Apart from the information provided in the attached table 1, it should be pointed out that the educational system comprises:

- pre-school education;
- general elementary education;
- secondary education;
- higher education;
- vocational training (1st, 2nd and 3rd stages);
- life-long education for adults.

Pre-school education is for children aged from 2 to 6, and is not compulsory.

General elementary education is compulsory for all children aged 6 to 13 and may be extended for 2 further years in specific cases. Its purpose is to provide pupils with comprehensive, basic non-specialised education, essentially the same for all but adapted to individual capacities and aptitudes. It is divided into 2 stages. During the first (age 6 to 10) emphasis is placed on general education. During the second stage (age 11 to 13), the branches of learning begin to be diversified and education is adapted to the pupil's intellectual growth and the development of his capacity for abstract thought.

Pupils who successfully complete this stage receive the "graduado escolar" certificate enabling them to progress to secondary (bachillerato) studies or to the first stage of vocational training. Those who do not qualify for the "graduado escolar" certificate receive a school-leaving certificate and must go on to the first stage of vocational training.

Secondary education (bachillerato). This lasts 3 years (from age 14 to 16); its purpose is to continue their general education while increasing the amount of knowledge conveyed in order to prepare pupils for higher education, the second stage of vocational training and working life.

Higher education. This is preceded by a pre-university orientation course designed to complete the training of those who wish to pursue their studies at a higher level within a general syllabus of basic, human and natural sciences, while guiding them towards careers for which they demonstrate the greatest aptitude and a vocation.

Those who successfully complete the pre-university course go on to higher studies, the purpose of which is to continue comprehensive education, to produce the qualified workers needed by the country and to provide for their further training throughout their working lives. It is also the role of the university to encourage cultural progress, the development of scientific research and the improvement of the national education system.

Higher education should be understood as comprising two sub-systems which relate to two different types of educational establishment. Firstly what may be called long-term studies, taught mainly in faculties and technical colleges. Secondly short-term studies which are taught in university colleges.

Higher education in faculties and technical colleges.
There are 3 stages:

- The first stage lasts 3 years and is devoted to basic studies. Students successful at this stage go on to the second stage, although they may also enter the third stage of vocational training and thus obtain a university degree.

- The second stage lasts 2 years and leads to the degree of "licenciado", "ingeniero" or "arquitecto".
- The third stage is devoted to specialisation in a specific field and the acquisition of teaching skills. It leads to the award of a doctorate, following the preparation and acceptance of a thesis.

Higher education in university colleges. This comprises a single course lasting 3 years and leading to the degrees of "diplomado", "arquitecto técnico" or "ingeniero técnico".

Vocational training. This will be dealt with in more detail since it has direct relevance to the subject of this questionnaire. Apart from regulations contained in the General Education Act, vocational training has been developed and organised on the basis of Decree 707 of 5 March 1976.

The general purpose of vocational training is to prepare people for their chosen career; its organisation remains closely geared to the structure of the labour market and employment forecasts. Another feature is that it trains people in the specific techniques of the line of work they have chosen and prepares them for social, economic, employer and trade union problems.

Vocational training has the following aims:

adequate professional training;

continuation of the scientific and humanistic education received at the lower educational levels;

consequently, it is organised in stages throughout the educational process, so that the different levels of education (general elementary, secondary and higher education) find their essential completion in the preparation for a career provided by the subsequent stages of vocational training;

through a system of interrelationships and equivalences, it offers practical opportunities for re-entry into the educational system at a higher level.

Lastly, such training is organised with sufficient flexibility to provide for the varying occupations constantly required by the community, to adapt studies to technological developments and employment trends, and to stress training in socio-economic and trade union problems as a preparation for working life.

- First-stage vocational training. This is the most interesting stage from the standpoint of this questionnaire. Entry is open to those who have completed their general elementary education (either as a "graduado escolar" or with the ordinary school-leaving certificate). The course is generally taken between the ages of 14 and 16; it lasts for 2 years and is taught in accordance with the survey findings and educational guidelines approved in 1974. The curriculum comprises 3 areas of study: general training, applied sciences and technical and practical know-how. The general training component is the same for all occupations, while the other two areas of study differ in content and objectives.

Each study area has its own objectives, although broadly speaking it may be said that the first stage of vocational training is aimed not so much at specialised training for a specific job as general training, the development of individual abilities and adaptation to the range of career opportunities; it is thus in the nature of multi-purpose training, which is obviously an important factor in generating a high level of mobility.

Lastly, it should be emphasised - on the basis of what has been said above - that the findings point to the existence of major training sectors, each with its own characteristics (currently 21 in all), and that within each major sector there are the more specific trades and professions which do not, however, constitute special fields of training.

- Second-stage vocational training. Entry is from the secondary (bachillerato) level and from the first stage of vocational training. The normal age group is from 16 to 19. This stage is designed to lead to greater specialisation and to offer a sufficient number of employment options combined with a certain amount of intensive career training. The second stage is the culminating point of secondary education and thus has a certain finality; it constitutes a central pillar of the educational system though this does not mean that those concerned must give up the idea of pursuing higher studies. The methodological guidelines and survey findings approved in 1975 confirm this point. It will be necessary to study the relevant curriculum in the light of the two systems under which such training is given.

- General system. This lasts two years and entry is open to those who obtain a secondary education ("bachillerato") certificate as well as holders of the first-stage vocational training certificate who have also successfully completed a course in additional subjects. The curriculum covers three areas of study: industrial training, technical and practical training, and general training. The content of each study area is specific to the speciality concerned.

- System of specialised career training. This lasts three years and is designed for trades requiring specialised, continuous practical training. Persons holding a first-stage vocational training certificate are eligible for this course without needing to complete the course in additional subjects. The course is divided into two successive stages of general studies and advanced vocational training, and includes an area of basic training and an area of further training.

Those who complete the second stage of vocational training, under either of the above-mentioned systems, qualify as specialist technicians.

The curriculum covers 15 major vocational fields and 34 different branches of specialisation.

A holder of the second-stage vocational training certificate may enter university after completing the pre-university orientation course or, without having to take that course, he may go directly to a college which provides training in his chosen field.

- Third-stage vocational training. This complements the first stage of university education (from the point of view of obtaining a university degree) and is the final stage of vocational training. Because of the system of progression from one stage to another, and its relationship with the rest of the educational system, such training constitutes a permanent link between education and employment. The main objective of this stage is the training of highly specialised technicians. The relevant curricula covers a period not exceeding two years and are supervised by the universities. Since third-stage vocational training has not yet got under way, we shall not dwell on this point.

With regard to occupational mobility, there are two important aspects to the rules governing vocational training in Spain (in addition to what has already been stated):

- Approval. It is possible that certain vocational courses that do not lead directly to an academic degree may in the future be approved by the Ministry of Education and Science so as to form part of the training required for a formal vocational degree. One of the effects of such approval will be to excuse holders of the relevant certificate from following certain courses which are at present compulsory; they will be able to complete their studies in any qualified institution and thus obtain the relevant academic degree.
- Qualifying examinations for extra-mural vocational training certificates. These are comprehensive examinations held regularly by the Ministry of Education and Science to enable working people who satisfy certain conditions relating to age and professional experience to obtain the relevant vocational training diplomas without needing to follow a regular course.

Lastly, it should be emphasised that, in the sphere of career promotion, the work being done in connection with mobility is worthy of note. However, this matter falls within the purview of other ministerial departments and will not be dealt with here.

This survey of Spanish education would not be complete without mentioning the following sectors which form an integral part of the system:

- Life-long education for adults;
- Specialised courses which, because of their specific characteristics, are not included in the various levels and stages of the general system of education;
- Special education, which comprises courses aimed at the social integration of deficient and maladjusted persons.

II. DETAILED REPLIES

The paragraphs refer to the numbers in the Council of Europe questionnaire

1.1 Present situation (see Foreword).

1.1.1 Simplified general flow chart of the educational system in the country visited (see Table I)

1.1.2 Reasons for, and situation of, the system observed: since when, how, why, how many etc

The reasons are obvious since the institution of a fairly new educational system starting in 1974 has called for substantial changes in the structure, objectives and (in many cases) the content of vocational training.

1.2 The objectives (of the first stage of training) in relation to the Montreux conclusions

In the foregoing description of the first stage of vocational training, reference was already made to this point; however, to be more systematic, the following features of the first stage may be noted:

- it does not comprise any considerable degree of specialisation;
- it aims to provide a wide basic cultural training enabling the recipient to tackle subsequent specialisation successfully, either in a job or through further studies;
- scientific training is intended to provide pupils with the essential minimum for their normal development and prepare them for training in new techniques;
- the technical and practical courses are designed to give the pupil an experience of technical trades and occupations which will enable him to make a conscious decision when selecting from the range of available occupations the one best suited to his vocation and aptitudes;
- the first stage is not confined to providing the pupil with a certain store of technical knowledge but also aims to initiate him in the specific characteristics of the branch of occupational activity initially chosen by him and to guide him in finding his true vocation;
- the choice of a specific career does not prevent a later change, although the person concerned will be obliged to study the subjects peculiar to the new career;
- when passing from the first to the second stage of vocational training, the pupil is completely free to select any branch and speciality without having them imposed on him in advance as a result of the line of study pursued in the first stage.

1.2.1 Grouping and concentration

a. list of "concentrated" vocational families:

- electricity and electronics;
- building and construction;
- audio-visual media;
- para-medical professions.

(The list is not exhaustive)

b. comparison with former nomenclatures

There have been fundamental changes in this field as a result of the disappearance of certain professions formerly taught in the first stage; though the increase in the number of sectors of economic activity has expanded the base of the first stage of vocational training, this is compensated by a considerable decrease in specialisation. Other new features concern access to training and the types of diploma awarded.

c. how this concentration has been carried out

- guiding concept: The chief guiding concept has been to reduce the number of vocational sectors in favour of making the content of educational curricula more general thus seeking to provide a common core training, despite the difficulties involved.
- sources of information: The chief sources of information, assistance and comparison have been the educational institutions themselves, the inspectorate and the establishment of representative committees to study curricula.
- methodology: The methodology adopted was dictated by the need to adapt to training requirements, which led to fresh thinking about the main guidelines for action. Consequently, keeping in mind the need for a certain amount of unity and internal cohesion: (1) a meeting of experts was convened to deal with the sectors concerned in a general way; (2) committees were established for the different sectors of economic activity (primary, secondary and tertiary); (3) inter-ministerial sub-committees were set up for each branch of production.

d. trends:

- towards new combinations: Not for the moment;
- towards sub-divisions (a reversal of the trend): There is a certain tendency towards sub-division, for two reasons: (1) the emergence of new professions requiring the training of people with specific know-how; (2) closer adherence to the requirements of industry which leads to a certain amount of tension between employers (who call for sub-division) and those responsible for training (who wish to maintain general courses as far as possible).

e. what proportion of the range of types of training is affected by these groupings? They affect about 20% of all possible options.

f. proportion of young first-stage trainees affected by these combinations: Between 36% and 42% of the total.

g. who lays down the guidelines? The educational authorities in consultation with the employers and trade unions concerned.

1.2.2 All-round training

a. proportion of "general" education courses ("academic subjects"): Such subjects make up about two-thirds of the total content of curricula.

b. time devoted to team and individual sports: Very little, perhaps 5% of the total.

c. time devoted to art subjects: Practically none except in rare instances.

d. cultural democratisation (non-vocational fields)

- cultural visits
- theatre
- other activities

These activities correspond more to the general elementary and secondary education levels. However, in vocational training courses, Saturdays are devoted to cultural activities in a broad sense.

e. outside activities

- visits to firms (preparation, visit and follow-up): Visits are generally made to firms belonging to the vocational fields chosen by pupils (they are organised by the study directors).

- other visits: None.

- f. knowledge of economic and social life gained in the form of:
- classes: Economic and social training accounts for about 7% of the total content of curricula.
 - practical work, surveys etc: No.
 - lectures: Yes (with varying intervals and concentration).
- g. knowledge of the rights and duties of the citizen and the producer: Yes (in connection with (f) above).
- h. is there preparation for trade-union activity, decision-making etc? Yes (in connection with the reply to (f) above).
- i. is vocational training receptive to technical innovations? Yes. However, there are certain limitations due to the difficulties of adequate training and retraining of teachers, the rapid obsolescence of equipment and the high cost of machinery.

1.2.3 Preparation for mobility

1.2.3.1 Horizontal (sectoral) mobility

- a. within the system
- the choices offered: As mentioned earlier, 21 options and 54 careers are offered in the first stage of vocational training; however, although this may be sufficient considering the country as a whole, it is less so at the regional and provincial level and in particular from the point of view of the individual educational institutions.
 - can one change direction during training? Yes, on the sole condition of passing the technology examination and completing the necessary courses.
- b. sectoral mobility after initial training.
- are there agencies designed to facilitate this mobility? There are no agencies of this type under the Ministry of Education and Science. Such agencies exist in the informal (non-academic) system of vocational training run by the Ministry of Labour.
 - legal provisions: Principally the Industrial Relations Act of 8 April 1976.
 - facilities (time off, training leave etc): These are provided for in the Industrial Relations Act. There is also the possibility of attending evening classes.
 - recognition of qualifications:

1.2.3.2 Vertical mobility (promotion)

a. within the system

- are there channels leading to the second stage?

. existing: Yes

. practicable (numbers concerned, results): Yes
About 70% of those who obtain the first-stage vocational training diploma go on to the second stage.

. facilities (curriculum adjustments, bridging classes):
Qualifying examinations (as already indicated in the description of the educational system); supplementary training courses to give access to the general system of second-stage vocational training. Training institutes may also recommend specific based on the characteristics of the area they serve or other factors. They may also propose curricula for careers not regulated by the Ministry of Education and Science. All the above applies equally to second-stage vocational training. Lastly, there are fairly strong links with the rest of the educational system.

b. external to the system

- are there agencies designed to facilitate this mobility?
Same reply as to question 1.2.3.1.b.

- legal provisions: Industrial Relations Act and the Ministry of Labour's Regulations for the vocational training of workers.

- facilities (time off, training leave etc): Same reply as to question 1.2.3.1.b. Here, mention should be made of the existence of a training course for middle-level staff in the agricultural, industrial and services sectors who require specific training for responsible posts and who have completed the first and second stages of vocational training.

- recognition of qualifications: The problem of the recognition of the academic value of diplomas not awarded by the Ministry of Education is a complex one and is currently under study. It would seem that the "social" recognition and recognition "on the job" is a distinct question.

1.3 Practical organisation of education

1.3.1 Material organisation

- a. age of entry: The minimum (normal) age is 14 years.
- b. duration of training
 - uniform: Yes
 - differentiated: Normally not
 - flexible in relation to individuals: No.
- c. forms adopted:
 - alternation: Only for agricultural training although it is also under study on a reduced scale in other sectors.
 - full-time: Yes, except for evening classes at the first stage.
- d. infrastructure, buildings, workshops: As regards the centre visited, the infrastructure is good, although generally speaking substantial differences may exist in this regard.

1.3.2 Organisation of teaching

- a. conventional (number of pupils per class or group):
Legally the maximum number of pupils per group is 40. Generally speaking, the current average is 25.
- b. work in teams or differentiated groups: Yes, in certain sectors and vocations such as chemistry, electricity, industrial design etc.
- c. independent work: Yes sometimes.
 - is there a resources room (self-instruction)? Yes, in the centre visited.
- d. are there units or modules (other than sub-divisions corresponding to study years)? Not at the moment, although the problem is under study in connection with the normal training system.

- e. is practical work:
 - traditional: Not usually.
 - original: Yes.
 - closely related to practice in industry? Yes.
- f. other original teaching solutions which may promote mobility: None.
- g. are the following practised:
 - participation: Yes.
 - self-management: Not as a rule. Yes in the case of curricula where there is participation by the vocational sectors concerned.

1.3.3 Award of vocational qualification

- a. mode of evaluation
 - final examination
 - periodic tests
 - crediting of units
 - continuous assessment: Yes.

1.3.4 Complete description of a curriculum
(in a field or special subject to be determined).

This description is given in documents which have not been sent with this report.

- b. costs in relation to the previous system: Costs are tending to rise: (a) staff costs are rising because of increases in both staff numbers and salaries; (b) equipment costs are rising generally, although there is a relative decrease owing to the reduction in the number of hours devoted to training courses.

- c. prospects for development: Good.

1.3.5 Teacher-training

- a. what is done to ensure that teacher training keeps pace with innovations?
 - teachers in general education: Courses are being planned to provide them with a grounding in technical subjects, which helps them to understand the circumstances of their pupils.
 - teachers in vocational subjects: Courses in industry are organised regularly (every 4 or 5 years).

- b. what is done to inform serving teachers and to change their attitudes? The teaching department organises activities aimed at achieving these objectives as far as possible.

2. THE INFORMATION SYSTEM

2.1 Knowledge of the employment situation (forecasting)

As a general observation, it should be mentioned that the problems of employment and forecasting fall legally within the purview of agencies not forming part of the Ministry of Education and Science and that, owing to lack of time, we were unable to make contact with the agencies concerned.

2.1.1 Existing arrangements

- a. for acquiring knowledge of the employment situation: In the case of the vocational training centre visited, there is close liaison with the trade unions, which are represented on the governing body of the centre.
- b. for forecasting employment conditions and trends in qualifications required: The Ministry of Education and Science has no jurisdiction in this field.

2.1.2 Qualified workers as a source of information

- a. in determining curricula: Yes.
- b. in forming combinations: Yes.
- c. in the organisation of teaching: No.
- d. in examinations: No, except for some very isolated experiments.

2.1.3 Constitution of committees

- informal: No.
- institutionalised: Yes.
- joint (employers-ministry): No.
- tripartite (employers-employees-ministry): Yes.
- other parties consulted (pupils, parents etc): There is pupil participation.

2.2 Choice of speciality

Two types of action should be noted, that of the Ministry of Labour in the field of vocational promotion, and that of the Ministry of Education, although unfortunately the latter has somewhat neglected the question of educational and vocational guidance.

2.2.1 At school (on entry into the system)

- a. means of information used by those responsible for the selection
- b. criteria
- c. meaning given to the expression "positive selection"
- d. influence of previous education (introduction to technology at the intermediate stage): Such influence is relative, since technical and vocational courses and activities have recently been introduced at other levels.
- e. the selection is simply a recommendation

2.2.2 Method of guidance (within the system) for:

- a. the choice of internal reorientation: Yes.
- b. the choice of optional subjects: No.
- c. the choice of reinforced studies: Occasionally.

3. THE RESULTS

3.1 Qualitative indicators

3.1.1 Opinions of the parties concerned

a. teachers, employers, guidance and placement services, employees, trade unions, pupils, ministry. Generally speaking, firms are not entirely in favour of the new system although they understand its possible advantages: it produces less well-qualified people than the previous system precisely because of the emphasis now placed by the educational system on more multi-purpose training, excluding, as far as possible, training for a specific job.

The great majority of teachers naturally find the new system superior to the old one, although there are specific criticisms.

Pupils find the new system more attractive. Consequently, there has been a considerable increase in school attendance rates, although the results show a fairly high drop-out rate (sometimes over 30%).

Lastly, we can give no indication of the attitude of trade unions to the new system, in view of the current transitional situation.

These are general replies. 3.1.2 gives the replies of the vocational training centre visited.

3.1.2 Types of questions to be put to the above

a. are pupils "better trained"? The reply is in the affirmative and corresponds to the present spirit of vocational training seeing that pupils are better trained because they have increased their ability to understand the process and to assimilate new and future learning.

b. are they more "adaptable"? Yes.

c. are the results markedly different from those obtained under the conventional system? The reply should be qualified, but generally speaking it is affirmative.

d. are those who have completed their training better able to undertake further training (vertical mobility)? Yes.

e. are they better able to change their occupational sector (sectoral mobility)? Yes.

f. should the system be developed? Of course, and naturally one of the principles behind the reform is that of flexibility and ready adjustment to educational and employment demands.

g. are there financial obstacles? Yes, considerable.

- other obstacles: There is resistance to the change of attitude required by the new system on the part of teachers as well as parents and employers.

3.2 Quantitative indicators: The fact that the new system was introduced fairly recently makes it difficult, nay impossible, to reply to the questions under this heading both on account of a lack of information and because many of the questions asked do not fall within the competence of the Ministry of Education and Science.

TRAINING FOR SKILLED WORKERS IN SWEDEN

The numbering of the replies is the same as in the Council of Europe's questionnaire. Comments are incorporated in each reply.

1. The Education System

a. Description

(See table 1 on the next page.)

Compulsory education for all children in Sweden lasts nine school years.

The goals of the comprehensive school may already encourage occupational mobility. These goals are defined as follows and can be seen in relation to the Montreux conclusions:

- to impart knowledge
- to develop skills
- in collaboration with their families, to promote the development of pupils into happy individuals and competent and responsible members of society.

The pupil is to be given the greatest possible help at school in developing according to his own individual capacities and in cultivating his own interests within a framework of co-operation.

After the comprehensive school, students attend the upper secondary school, dating from the autumn term 1971.

This new school comprises some twenty lines of study lasting either two or three years. The technical line, however, is a four-year line.

Some lines in the upper secondary school are directly vocational, while others prepare students for somewhat broader fields of activity and others again provide qualifications for further studies at universities, colleges or certain specialised professional colleges.

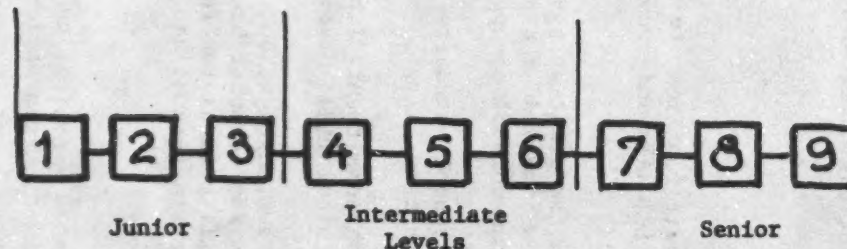
b. Reasons

There are many good reasons - social, educational and financial - for co-ordinating the objectives, organisation and resources of upper secondary education.

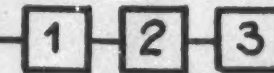
Table 1

SWEDEN

Compulsory School



Technology



Humanities (Arts)
Social Sciences
Economics
Natural Sciences



Social
Economics

Technology

Music



Clothing
Building and Construction
Distribution and Office
Electro-Television
Vehicle
Agriculture
Consumer
Food Manufacturing
Processing Techniques
Forestry
Woodwork
Workshop
Nursing

Compulsory Comprehensive School

Integrated Upper
Secondary School

Pre-School	School Years	1	2	3	4	5	6	7	8	9	10	11	12	13
Age		7	8	9	10	11	12	13	14	15	16	17	18	19

Social reasons

The partition into separate institutions was both a reflection and a cause of certain social attitudes. The distinction between practical and academic education is and - if the truth were but known - has always been, an artificial one. Many people have credited academic subjects with a superior status to the practical ones. The introduction of a single school eliminates the social connotations attached to different subjects and makes them equally attractive. Only then it is possible for the individual pupil to choose a line of studies on the basis of his or her wishes, interests and aptitudes.

Hitherto the different sectors of upper secondary education have been separately housed. The physical segregation of the academic and the practical has produced one-sided groups of pupils bearing little or no resemblance to the social realities of subsequent working life.

Educational reasons

According to the Swedish authorities, an integrated upper secondary school makes it easier to deploy resources of staff and equipment more effectively. Co-ordination facilitates a better range of teaching posts, so that more qualified teachers are available for more subjects and students can be taught by the teacher best qualified for the work under consideration. Integration also makes it easier for studies to be conducted on the best premises for each subject.

General subjects in the lines replacing vocational school follow the same syllabus as similar subjects in the lines corresponding to continuation school, thus simplifying the internal co-ordination of upper secondary school studies.

Financial reasons

Integration also presents financial advantages, above all at municipal level. Not only does it reduce administrative costs to a certain extent, it also facilitates a more effective utilisation of resources such as expensive special facilities and technical apparatus.

The boundary between theoretical and practical education is no longer as hard and fast as it used to be, and the educational decisions of the individual student are less binding and final today than they used to be.

c. Grouping and concentration

Previously vocational courses had for the most part been quite rigidly specialised, focussing on specific occupations. This structure, however, was no longer considered practical in view, among other things, of the rapid changes occurring in the labour market.

Vocational education was therefore revised in such a way that its basic elements came to focus on wider sections of working life than particular occupational fields.

Upper secondary studies can be grouped into three main sectors:

Arts and social study routes

Two-year training:

- consumer line
- nursing line
- social line

Three-year training:

- liberal arts line
- social sciences line

Economic study routes

Two-year training:

- distribution and clerical line
- economics line

Three-year training:

- economics line

Technical and natural sciences study routes

Two-year training:

- clothing manufacture line
- food manufacturing line
- workshop line
- motor engineering line
- woodwork line
- building and construction line
- electro-technical line
- processing techniques line

- forestry line
- agricultural line
- horticultural course
- technical line

Three-year training:

- natural sciences line

Four-year training:

- technical line

Most lines subdivide into branches, and some lines and branches are also divided into variants.

In principle, there are enough upper secondary school places for all 16-year-olds leaving the comprehensive school. About 70 per cent of these school-leavers choose to go straight on to upper secondary school. The places which are left over are taken by adult students or by young people who have chosen to conduct their studies in the form of recurrent education.

d. All-round training

- Students are given a broader basic education. Specialisation is introduced gradually.
- Studies are not confined to vocational subjects. General subjects are now included in all vocational lines. Swedish, physical education and working life orientation are compulsory subjects. Options include English, mathematics, civics and drawing.

There are certain provisions entitling students in many two year lines of upper secondary school to substitute a subject in some other line or branch for a vocational subject. This facility, known as free option, may comprise up to 12 periods per week.

Students in the two-year vocational lines of upper secondary school thus receive a broader basic education than was provided in the former vocational school. Studies then gradually become more specialised through choices of branches and, in certain cases, of variants.

This means that students can now leave their final choice of studies to a later stage than was possible in the unreformed vocational school. It also means that vocational education is more versatile and therefore more capable of helping students to adapt to the changes occurring in the labour market.

Upper secondary school vocational education is based on what is termed the block principle, whereby similar occupations are grouped into large occupational areas. The basic block, ie the introductory teaching, covers points which are common to the entire areas. Studies then become more specialised according to the character of the different occupations.

e. Preparation for mobility

Horizontal mobility within the school system is limited through certain rules. Choices are offered in the form of sub-alternatives. Thus for the two-year motor engineering line, studies are common during the first and the second terms, but during terms 3 and 4 four different sub-alternatives are offered: motor mechanics; mechanical engineers; spares personnel; aircraft mechanics.

Sectoral mobility after initial training can be facilitated by labour market training.

Cyclical and structural changes in industry can force firms to limit or discontinue production. As a rule, the people made redundant by these changes are unable to find new employment without first undergoing some kind of training. This is where labour market training comes in.

This special form of training, provided for reasons of employment policy is, however, also available to others, eg housewives or handicapped persons wishing to obtain gainful employment and who, therefore, stand in need of vocational training.

The scale and emphasis of labour market training are determined by the situation of the labour market. Premium training as it is termed, is designed to increase the supply of skilled labour in sectors where it is lacking. Persons applying for premium training need not be redundant or in danger of becoming so.

Labour market training is an important factor in regional policy. For instance, when new firms are established in the northern areas of Sweden, where declining employment is a general problem, labour force training constitutes an important part of the establishment process.

Labour market training also enables workers laid off (due for example to seasonal unemployment or to temporary stoppages) to improve their knowledge of their trades (further training).

Labour market training also includes continuation courses. Theoretical and/or practical training of this kind serves to improve the job opportunities of various groups with either longer training behind them or deficient training backgrounds.

With regard to vertical mobility, it must be said that, within the system, there are senior special courses following at least two years of upper secondary school. In Swedish discussions on education policy, the idea of recurrent education has been steadily gaining ground. The term is taken to imply opportunities of alternating between periods of study and periods of gainful employment.

At university level, there are some colleges of vocational and technical education.

One of the primary objectives of the high-school reform is to give those adults who have gone to work after basic education, greater opportunities to complete extension courses of further education at high-school level. The high school is planned to facilitate the setting up of a system of recurrent education. Further improvements are to be made concerning the opportunity to study a single course with the aim of advancing within ones trade or profession or for reasons of general interest.

To broaden recruitment and create a larger number of opportunities for study at high schools, the competence requirements system is to be changed. Formal school merits will no longer be the only passport to high-school education. Those who have attended upper-secondary school or a comparable institute, and those who have been employed (or cared for their children) for at least four years and who meet the special requirements for knowledge which are at times made to ensure that the student can follow the course, will be eligible for entrance into the high school. A knowledge of English is generally required, since parts of the course material are written in that language. In order to counteract socially based recruitment, even experience of working life will be counted when selecting students for courses with a limited number of places.

Practical organisation of education

Upper secondary school follows on from the nine-year compulsory comprehensive school. The duration of training is 2 years for the vocational training. Normally, the training is uniform during the first two terms and differentiated during terms 3 and 4. When the National Board of Education said in an information document that "the time needed for the particular task depends on who does it. Different students work at different speeds. This means that the order in which they move from one place to another is not fixed in advance" this seems to indicate a sort of modular training system. Example: mechanics.

The aim is to provide both a general basis and a vocational, technical foundation for the student's subsequent development. The general portion of the training includes languages, civics and vocational orientation as well as physical training. The technical part of the training includes various types of engines, transmissions, steering and control systems, welding, soldering etc. Thus the knowledge acquired here is of a kind needed by every vehicle mechanic.

Practical work is not done in the traditional way. The course includes 18 learning places. A learning place represents one item of course content. Learning places are equipped with various functions and materials while developing a particular skill. In fact, one of the most important skills is the capacity to study. The students have, especially at the beginning of their training, to spend a lot of time together with their teacher learning to read and interpret the information material at the learning places.

Teacher and students discuss at the beginning - and, where necessary, during the course of training - the best way in which to conduct the studies.

When the students are judged capable of studying independently they are given first individual tasks at the different learning places. They are given certain written questions and tasks to work on. These in turn determine the scope and direction of studies. The students change learning places and are given new tasks when they are ready. The changes go on until all the students in a first lap have studied at all 18 learning places. The work continues in a second, a third and a fourth lap. The students are given new, more comprehensive assignments, but they also review earlier parts of the course.

Since admission to courses is often successive and the persons attending the courses often have different study aptitudes, it is important for teaching materials to be adapted to such differences. The teaching materials used for labour market training should therefore be for self-instruction. Increasing provision is being made for this requirement in the production of new teaching materials. Use is often made of conventional materials together with specially compiled work sheets and self-evaluation arrangements.

Award of vocational training

The award of vocational training is done mostly in the form of continuous assessment. In labour market training, for instance, tests for measuring the trainees' knowledge (both previous knowledge and the knowledge acquired during the actual training period) are compiled centrally to ensure uniform assessment throughout the country.

Teacher training

Teachers in upper secondary school for vocational streams need at least 7 years' experience in industry. There are summer courses and one-day-courses to ensure that teacher training keeps pace with innovations.

2. The Information System

2.1 Knowledge of the Employment Situation (Forecasting)

Sweden has at its disposal a well established system which reflects short-term and long-term developments on the labour market. The main source of information is the National Board of Statistics. Data obtained from this board are further supplemented by research work by other institutions like the Labour Market Board and the National Board of Education. The Organisations of Employees (Swedish Confederation of Trade Unions) and of Employers (Swedish Employers Federation) have also set up research departments.

In order to maintain a close relation between school and working life a number of commissions on a national, regional and local basis were established quite some time ago which enable a close formal or informal co-operation between schools and working life. Members of these commissions are usually the National Board of Education, the Labour Market Board, Trade Unions and the Employers' Association as well as teachers' representatives. They have always had a considerable influence on the development of vocational training.

In 1974, a working party was established on a national basis by the National Board of Education which was comprised of representatives of the above-mentioned groups. The proposed suggestion from this commission, to set up a joint consultation body in each municipality and in each county, has been widely realised in the meantime.

The aims of these joint consultation bodies are adjusted to local requirements. They always comprise:

- mutual information between school and working life and within the education system itself;
- organisation, forms and content of study and vocational guidance (see next chapter);
- activities and organisation of the local vocational committees;
- education on work environment questions and labour market orientation;
- inventory and presentation of school requirements in the way of contacts with working life and the ability of trade unions, firms, etc to cater for those requirements;
- work allocation and co-ordination - chronologically and in other respects - with regard to the procurement of work places for school's working life orientation;
- efforts on behalf of premature elementary (comprehensive) school-leavers, regular (comprehensive) school-leavers, who do not go on to upper secondary school or who fail to complete the course of education/training they commence in upper secondary after leaving elementary school;

- measures on behalf of handicapped pupils;
- extension training facilities for school personnel and representatives of working life;
- forms, content and methods of contacts between school and working life and the evaluation of activities.

2.2 Choice of Speciality

Vocational guidance was established in Swedish schools in the early 1940s. Due to the increasing importance placed on vocational guidance, the existing system was drastically changed by law in 1974. The so-called "Study and Vocational Orientation Organisation" was founded during this year and since then has been represented in comprehensive and upper secondary schools.

The term "Study and Vocational Orientation" is a collective term for the entire programme of study and vocational guidance in schools. This includes both practical vocational orientation and measures taken by the labour market administration. This new organisation entails the appointment of a special study and vocational guidance consultant who is usually concerned with these activities in schools on a full-time basis. Various parts of the study and vocational guidance system, such as practical vocational orientation, are integrated with the teaching of several subjects and the basic and in-service training of all teachers should include certain aspects of the study and vocational orientation system.

Study and vocational guidance should inform pupils about occupations, education alternatives and the labour market. It should also give them personal guidance in learning to know themselves, their interests, needs and personal requirements, and should train their ability to plan their actions both for long and short term, and their ability to make sound, well-motivated decisions of their own. The organisation for study and vocational guidance also has the clearly-determined task of assisting pupils in the development of their own resources, to enable them to govern and control their own situation, thereby giving them the possibility of participating in social change.

Practical vocational studies are of great importance. Compulsory practical vocational orientation in comprehensive schools comprises three vocational orientation study visits in grade 8 (see table 1), a two-week visit to places of employment during the autumn term in grade 9 and, in certain cases, the possibility of an extension of the period by up to 36 days. Experiments with an orientation week at places of employment are now in progress in upper secondary schools. A central agreement has been concluded by the National Board of Education and the National Labour Market Board with the unions of employers and employees on the subject of contacts between schools and working life.

The selection of one of the vocational lines in the upper secondary school is not simply a recommendation for the applicant, it is mandatory but subject to appeal. This is particularly the case when aptitude and ability are not in line with the requirements.

Even after a decision for a certain line of study in the upper secondary school has been made, the students can always rely on the consultant's help who will give guidance especially to those students:

- who have particular difficulty in realising their educational and vocational plans;
- who for various reasons suspend their studies for a longer or shorter period of time;
- who on leaving school do not apply for or obtain employment and do not go on to some form of further education;
- who prematurely terminate their studies.

This follow-up work is usually a matter of team-work and can involve pupils, parents, school staff and officers from the Labour Market Administration. The duration of follow-up work is not predetermined but is gauged according to actual circumstances.

It may lead to the pupil applying for a course of studies radically different from that which he has previously followed. Personnel from the school and the Labour Market Administration therefore co-operate with the local admission board and, in consultation with the pupil and/or his parents, observe the pupil's progress towards another course of education.

At present, opinions on the efficiency of the study and vocational orientation system differ. While the National Board of Education and the Labour Market Board stress the importance of such an institution, the Trade Unions criticise its work. When discussing the pros and cons, it should, however, be kept in mind that this system has only been in full operation since 1 July 1974. It is well known that a reliable decision can only be made after a longer trial period.

3. Results

3.1 Qualitative Indicators

Since a final opinion on the usefulness of the study and vocational orientation system is rather premature, it is difficult to judge the overall system since the first group of students formed under the reformed system only left school in 1973. An evaluation on a scientific basis is being carried out, but no results have been published so far.

However, it would be of interest to analyse the statements of the social partners, ie the Swedish Confederation of Trade Unions and the Swedish Employers Federation, on the efficiency of the system.

While the trade unions fully approve of the questions under 3.1.2 of the questionnaire, the employers have voiced a somewhat more discriminatory opinion.

In their opinion, students from the upper secondary school are scarcely better trained than those from the former vocational schools. As there has been a decrease of time devoted to vocational training and an increase to time devoted to basic skills, the trade skills have not been developed as they used to be. This fact is considered partly negative by, for example, small firms/factories which have not got in-service training but demand a skilled worker immediately. Bigger firms which have in-service training - and value abilities such as willingness to learn and to co-operate - appreciate, however, the theoretical knowledge that the students of today have acquired in the vocational lines at the upper secondary school.

However, employers usually point out that the increased knowledge of vocational theories and general knowledge may be considered an improvement in the future.

In the opinion of the employers, the question whether students who have benefited from the new system are more adaptable than others depends on which line the students have chosen at the upper secondary school. However, if the students cannot get a qualified job initially, they will be able to work within a wider area as they have had a vocational introduction, although this introduction may be brief due to a broader and deeper knowledge of vocational theory. With regard to vertical or sectoral mobility, it is usually accepted that students who have attended the upper secondary school are probably better prepared for further study.

Moreover, students at the upper secondary school have greater possibilities of changing trades within the vocational sector they have chosen, than those of the former vocational school as the training of that type of school aimed at a certain profession only.

As far as the development of the present system is concerned, the different curricula might have to be changed as experience of recent years has shown. In some cases, they will have to be expanded, in others decreased. The principal ideas, however, are still valid.

3.2 Quantitative Indicators

The National Board of Statistics and the Labour Market Board regularly publish statistics on pupils leaving school and they also give information on how long it takes in individual cases to find a job. However, the former vocational school and the vocational lines in the upper secondary schools are not separated in these statistics and consequently they cannot be compared.

As in other countries, a refined statistical analysing system which not only lists the number of unemployed persons and persons seeking employment or changing jobs, but which also reflects changes taking place throughout the labour market (eg occupational mobility, geographical movement and changes in employment within enterprises) is lacking in Sweden.

4.

Conclusions

Without doubt, the Swedish system of fusing vocational and general school systems into an integrated upper secondary school has created the basis for an improvement of vocational training. Even without any vocational training in a company, the Swedish model seems to do justice to the demands of a constantly developing technology in trade and industry - although some member states of the Council of Europe consider vocational training in enterprises as necessary. Furthermore, the chances for the entire school system, which have arisen out of the breakdown of artificial barriers between more vocational and more academic education, should not be underrated.

On the other hand, it should not be forgotten that the Swedish system has also produced a number of problems which have been analysed, but not, as yet, satisfactorily solved.

TRAINING FOR SKILLED WORKERS IN SWITZERLAND

I. FOREWORD

Introduction (see Table 1)

It seems useful to give an idea of the school system in Switzerland. Compulsory schooling lasts nine years, starting at the age of six or seven. Primary school lasts six years, and lower secondary school three years. In German-speaking Switzerland there are four kinds of schools at this stage, differing in the level of education imparted. From the lowest level upwards, these are:

Oberschule, Realschule, Sekundarschule, Gymnasium.

Courses are mainly in the field of general education. In French-speaking Switzerland, the lower secondary level could be more appropriately termed an "orientation" period, divided into three sections: one is the path to longer studies; one is for those who have not made up their minds, but have kept open the option for longer studies; and one is for those who are not interested in longer studies. The first two years of secondary school provide a general education, and there is some differentiation in the third year.

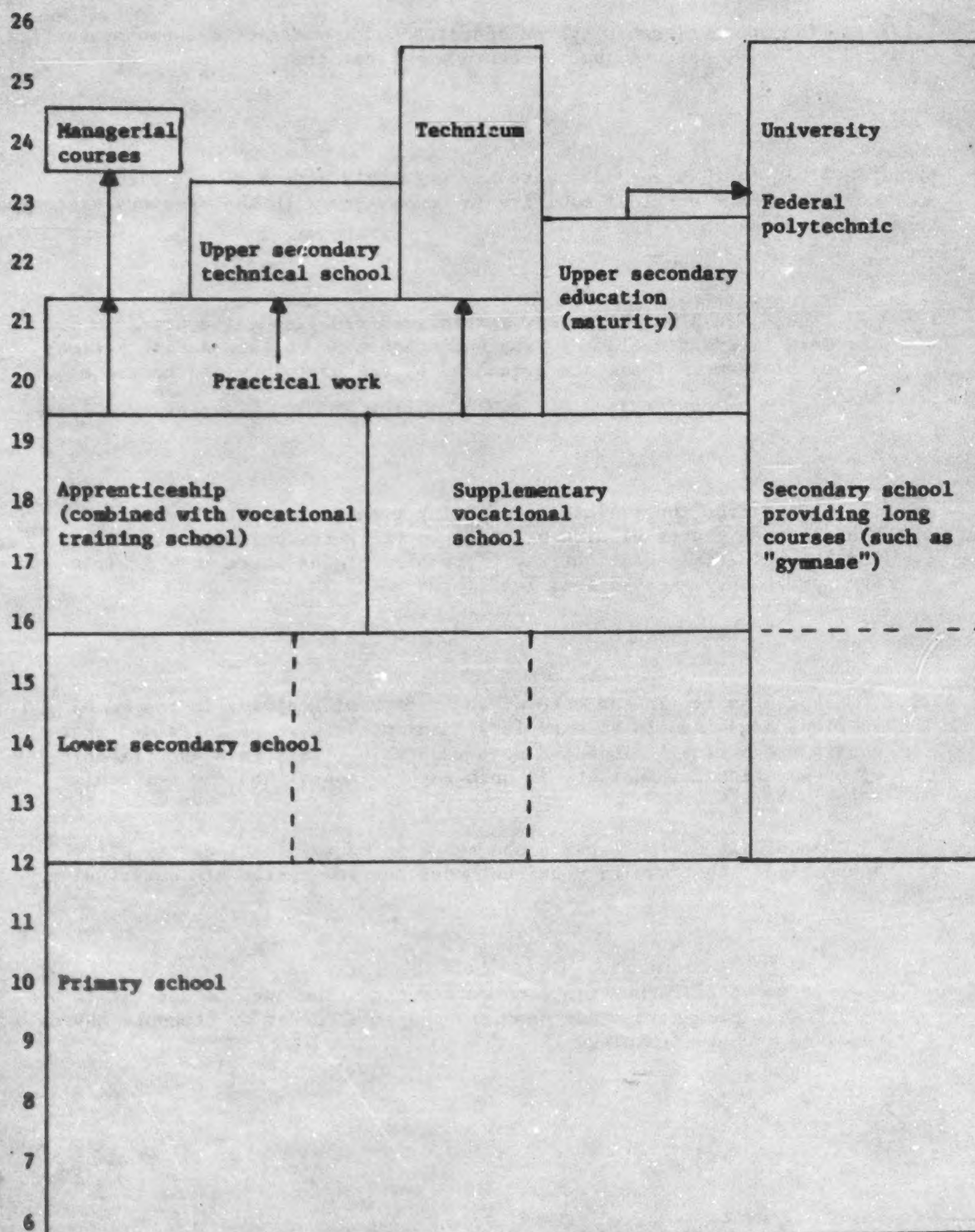
After the nine years of compulsory schooling, pupils may opt for further study or for working life. Those who opt for working life may enter full-time vocational school (5%) or apprenticeship (95%). There is an entrance examination for the full-time schools.

During the eighth and ninth years of compulsory schooling, guidance services endeavour to help pupils choose the path most appropriate for them.

The following table illustrates the system:

Table 1

SWITZERLAND



Comments by the expert

1.1.2 The apprenticeship system operates under contract between apprentice and employer, approved by the cantonal authorities.

1.2.1 (a & b) In this respect there has genuinely been a move towards horizontal and vertical mobility in comparison with the previous situation.

1.2.3.1 There are also short-term specialised redeployment courses in the form of evening classes, weekend schools or courses during periods of unemployment. These are organised by the unemployment insurance services.

1.3.5.B As regards the training of serving teachers, it has been found that in some places efforts are made to train teachers in educational and psychological terms but there are also places where this training, when obligatory, leaves room for improvement.

3.1.2 For example, in the case of the reform of training in the mechanics section, organised in an exemplary fashion, it must be concluded that pupils are better trained and more adaptable. This is a good example of preparation for mobility in both the horizontal and the vertical sense.

According to the experts who check up on examinations for all apprentices, the results obtained under the new system are outstanding.

3.1.2 It is still rather too soon to reach conclusions, because it is only one or two years since completion of the course by students having received the new training.

II. DETAILED REPLIES

The numbering of the replies is the same as in the Council of Europe's questionnaire.

- 1.1 The initial training of skilled workers (apprenticeship) is not, as in certain other countries, obtained only in vocational training schools or training workshops, but almost entirely at apprenticeship courses in firms.

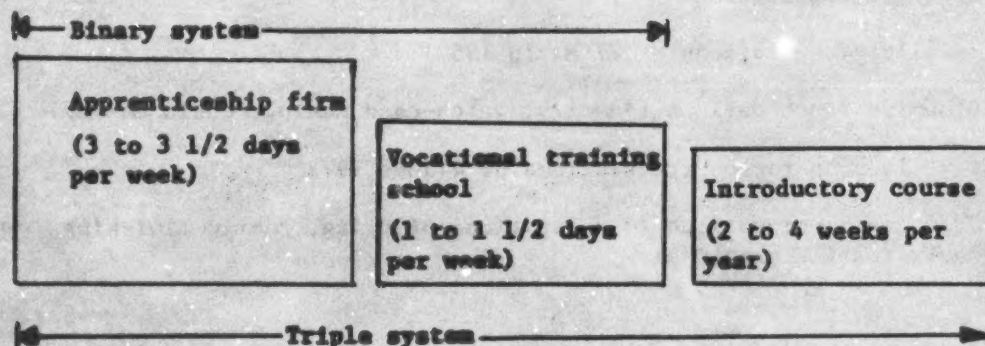
Out of the 140,000 young people in apprenticeship schemes in accordance with the regulations, some 95% are trained in small-scale craft firms or in industrial or commercial firms, and as a rule attend courses at the Federal Vocational Training School one day per week (binary or day-release system).

5% receive practical and theoretical training in an official training workshop within an integrated vocational training school.

The binary system closely corresponds to practice but has one drawback: it does not always provide very methodical training. This is why, in big industrial firms, the young apprentice first learns, for a year or more, in the firm's own workshop the basic rudiments of the job. Over the past few decades, professional associations have increasingly created apprenticeship centres independent of firms. In these centres, apprentices can acquire these basic elements at a basic course lasting 2 to 4 weeks per year. What is learnt at these courses is then put into practice and developed by means of work in the firm.

This third dimension (introductory course) transforms the binary system (apprenticeship firm, vocational training school) into a triple system.

1.1.1



- 1.1.2 Vocational training agreements are laid down for all Switzerland by the Federal Vocational Training Act (1933, revised in 1963 and currently in the course of amendment).

The confederation issues apprenticeship regulations, examinations and study plans for each profession, all of which have to be constantly adapted to technical developments. The Federal Department of Economics is the higher authority, under which there operates a Federal Office for Industry, Arts and Craft, and Labour (Office Fédéral de l'Industrie, des Arts et Métiers, et du Travail - OFIANT), with a vocational training department.

The cantons represent the executive authority. It is their function to exercise control over apprenticeship, and they have vocational training offices for this purpose.

The provisions on vocational training correspond to the economic structure of the country. This system has the advantage of offering basic training in a profession to all young people not attending an upper secondary school. This is one of the reasons why 70% of all boys and 40% of all girls serve an apprenticeship.

- 1.2.1 (a & b) To our knowledge, there are no concentrated vocational families in Switzerland of the type that have been established in the Federal Republic of Germany. However, a number of occupational branches have been grouped together into basic occupations, for instance:

- watch and clock maker (industrial) (regulations of 7 March 1967)

Grouping 7 occupations in the watch and clock making industry

- garment maker (regulations of 23 January 1973)

Grouping 7 occupations (knitted garments, ladies' wear, ladies' coats and costumes, ladies' underwear, men's underwear, men's clothing, corseterie)

- jeweller (regulations of 27 March 1950)

Grouping 3 occupations (jewelry, watch-case making, chain making)

- textile preparation (regulations of 4 June 1973)

Grouping 5 occupations (3 occupations of dying, fabric finishing wool, textile printing).

Other basic occupations are still at the introductory stages in the printing industry and mechanical industry. In the mechanical industry, 22 occupations are to be grouped into 5 new basic professions at two levels.

- c. The purpose of these groupings is to group within one occupation a number of branches in the same field, but less widespread. No special methodology has been established. The experience of those who draft the regulations is used as the source for information, and common sense as the guiding concept.
 - d. The number of apprenticeship schemes governed by regulations increased constantly up to 1970. Since then, there has been a definite drop. The competent authorities have adopted the aim of reducing the number of apprenticeship schemes governed by regulations.
 - e. The basic occupations referred to under (a) and (b) replace 10% of the preceding occupations.
 - f. The 5 occupations referred to above cover 0.5% of all apprentices, in the applied arts 3%, and in the mechanical industry 16%.
- 1.2.2.a During the training period, 3 1/2 to 4 days are spent on practical training in the firm, and 1 to 1 1/2 days on theoretical training at vocational training school, where 3 hours are as a rule devoted to general education and 5 hours to vocational branches.
- b. The Federal Gymnastics and Sport Development Act (1972) provides for 1 gym lesson per week for apprentices having 1 day at school, and 2 for those who have 1 1/2 days at school. Since the number of gymnasia is still inadequate, compulsory gym cannot be finally introduced until the beginning of 1986. Until that date, physical education is organised depending on the possibilities. Physical education and sports for apprentices is intended to prevent deformations stemming from bad posture. Team sports are organised in the form of games and on special sport days.
 - c. The reform of study plans over the past few years has made it possible to give more room to art education. Throughout the apprenticeship, apprentices are given 1 hour per week for their mother tongue. Half this time is spent on language, and the other half on creative activities such as literature, the visual arts, music, the mass media, economics and social studies.
 - d. There are no compulsory provisions on cultural democratisation. Visits to the theatre, concerts and other cultural activities are left to the initiative of the class teacher or head of the school.
 - e. Each year most classes visit one or two manufacturing firms or services (public or other). These excursions are designed to give further insight into the subjects dealt with in class.

- f. Knowledge of life is included in courses on commercial studies and the mother tongue. In addition to this, problems such as the choice of partner and marriage are discussed in special courses.
- g. Education in civics and economics is intended to give the young citizen the basis for judgement enabling him to take political and economic decisions. One hour per week is devoted to these subjects throughout the period of apprenticeship. Education in civics includes subjects such as the process of forming attitudes, knowledge of institutions, legislation, rights and duties of the citizen, Switzerland in the world, democracy and dictatorship. Education in economics deals with the aims and foundations of the economy, economic systems, money and the short-term economic situation, the external economy, economic branches in Switzerland. Teaching time is divided between civics and economics, and 1/4 of the general course is allocated to the teacher to enable him, over and above the required subject matter, to develop, supplement and up-date his teaching.
- h. The subjects "preparation for trade union activity" and "preparation for decision-making" are included in the subject matter covered in civics, economics, the mother tongue and commercial study courses.
- i. In the course of the reform of regulations on apprenticeship, the subject matter of the branches "knowledge of materials" and "working techniques" are adapted to new conditions as the need arises. Vocational training schools are provided with the latest instruments and technical equipment.

1.2.3.1.

- a. For most of the occupations subject to apprenticeship schemes, fundamental possibilities for options do not exist. In recent years, however, possibilities for choice have been created when regulations on apprenticeship schemes have been drawn up or revised. For instance:

For commercial employees: bookkeeping/secretarial skills.

For printers: photo engravers/offset pressmen/typesetters.

The apprentice decides on his option, on the basis of his wishes, before the start of the apprenticeship or after 1 or 2 years of apprenticeship.

Vocational training schools provide numerous optional courses that the apprentice can attend outside working hours. For instance: foreign languages, electronics, typing, data processing.

Upper secondary vocational school enables gifted apprentices to further their general education. These possibilities of further training enhance mobility.

- b. The diploma issued on completion of studies at vocational upper secondary school offers the possibility of entering higher technical schools without examination. The qualifying certificate (end of apprenticeship examination) entitles the holder to attend supplementary training courses in preparation either for activities requiring special skills (higher vocational examinations, technicians) or for managerial jobs.

1.2.3.2

- a. In a number of occupations there has for some time been the possibility of choosing either training channels at different levels, and after completion of a simple apprenticeship, of obtaining, by means of supplementary training, the qualifying certificate of an apprenticeship requiring other skills (in metallurgy); or of supplementing a first apprenticeship by a second more elaborate apprenticeship in the same sector (retail salesman). A small proportion of young people take advantage of this possibility.
- b. People working in an occupation without having been apprenticed may, after a fairly long period of activity in the occupation and after attending spare-time courses, take the examination for the qualifying certificate. For certain occupations, special courses have been arranged. Special training leave is not usual.

1.3.1.a Apprentices are minors of at least 15 years of age who are no longer subject to compulsory schooling and are learning an occupation governed by the Federal Act, whether in a firm or a vocational or applied arts school. Exception: hotel and catering occupations, which start at 16.

- b. The duration of apprenticeship for each occupation is laid down for the whole of Switzerland. It ranges from two years (eg salesmen) to four years (mechanics). The Vocational Training Act makes provision, to a limited extent, for shorter apprenticeships if the apprentice can demonstrate sufficient preliminary knowledge.

- c. (cf 1.1.1)

Practical training in a firm and in introductory courses, as well as theoretical training at vocational school (day-release courses - 1 to 1 1/2 days vocational training, 2 1/2 to 4 days practical training), or, for a small proportion of apprentices, block courses lasting several weeks. In certain special occupations, full time courses are used.

- d. Practical training is acquired in the various departments of a firm (sometimes with apprenticeship workshops) and in vocational training centres and associations not dependent on a firm. Theoretical training is given in municipal vocational training schools (state controlled).

1.3.2 (a & b) In vocational training schools, teaching is, according to the traditional rule, given in classes of 10 to 25. In apprenticeship workshops, apprentices are divided into working groups of different sizes. In firms, the practical training of the apprentice is entrusted to a skilled worker or master.

- c. Resources rooms for self-instruction are found only in a few large vocational training schools.
- d. Training is divided into complete courses. Systems based on units or modules are unusual. Since firms are free to draw up their own training programmes, it is possible that systems similar to units or modules may be used under another name.

In the graphic arts, apprentices have recently acquired the opportunity to prepare for broader activities by means of "modules" of one year (supplementary training).

- e. Practical work is closely related to practice in industry, since practical training is usually conducted in the firm.
- f. According to various surveys, the considerable mobility of Swiss workers is the result of relatively broad and practice-related basic training. The system that has long been used has stood the test of time, and makes it possible to train people capable of multiple duties, who can achieve remarkable vertical and horizontal mobility by means of relatively little organised supplementary training.
- g. In vocational school and in many apprenticeship workshops arrangements have been made for pupil participation. Although there are no legal regulations on this subject, we are constantly finding that apprentices - especially in small, well-managed firms - are entitled to express their opinions.

1.3.3.a At the end of the apprenticeship (duration see 1.3.1.b).

Requirements as regards theory and practice are laid down in the apprenticeship regulations concerning training and examinations for the qualifying certificate. These regulations are drawn up by the Federal Department of Economy.

The evaluation is conducted by means of a scale of marks ranging from 6 (perfect in all respects, neat and thorough) to 1 (zero or not done).

Periodical state control is exercised over training in the firm by means of the vocational inspectors of the canton vocational training office. The contracting parties or the vocational training office may, if necessary, order an interim examination halfway through the training period. In some occupations, the interim examination is compulsory. Vocational training schools are vetted by vocational training school inspectors.

Continuous assessment by a report on the training - drawn up by the person responsible for training - on the faculty of understanding, behaviour at work and personal behaviour at school throughout the period.

1.3.4 The new concept of vocational training of the Association patronale suisse des constructeurs de machines et industriels en métallurgie (ASM) is explained in a programme entitled "Changing industrial occupations" (1). The guiding idea behind this programme is to concentrate a large number of industrial occupations into 6 main occupations, subdivided into 2 sub-occupations, with 2 or 4 years of training and a varying level of requirements.

- a. No specific figures can be given, since the number of staff responsible for training varies with the occupation and firm.
- b. No advance cost-benefit analysis has been worked out, the essential purpose being to improve training.
- c. Since the system is still at the development stage, no final conclusions can be given.

1.3.5.a The Swiss Institute for Vocational Training Education (Institut suisse de pédagogie pour la formation professionnelle) in Berne supervises the initial and in-service training of vocational training school teachers. Only qualified persons having experience of work in a firm and having completed their training with a one-year course in education, psychology and teaching methods can be considered for the teaching of vocational subjects.

(1) An excellent booklet, which we have not been able to add to this report. ASM, 1974

For general cultural subjects, primary school teachers are selected. These are trained in a two-year study programme in the following subjects: political economy, national economic policy, business economics, law, public law, commercial correspondence, bookkeeping, contemporary literature and history, as well as education, psychology and special and general teaching methods.

This wide-ranging training is intended to enable teachers of both types of subject to be open to any innovations.

- b. For the in-service training of teachers, the institute lays on about 30 curriculum-related programmes per year, some of which are compulsory and others optional. In some vocational training schools, teachers may be given longer periods of paid leave for training purposes.

Teachers and those responsible for training under apprenticeship schemes receive a one-day to two-weeks' training course. The introduction of a compulsory basic course of 50 hours is planned in the fairly near future.

- 2.1 The term "guidance" in this field does not mean vocational guidance as an institution, but the process of choice of school or career that develops within the system of training and employment. Opportunities and means of training as well as job possibilities are not considered in terms of supply and demand. The guiding principle is the free choice of school, occupation or study. Under Section 276 of the Swiss Civil Code, the decision is up to the parents. The parents have, as far as possible, to take into consideration the physical and intellectual capacity, and the tastes or inclinations of the child. The decision on choice of occupation may be rendered more difficult by the school career and the selection criteria of teachers and teaching institutions, as well as the lack of desired places for training. The official Career Guidance Office plays a useful part in such situations: the decision on the choice of occupation is then based on a better knowledge of the capacities, tastes and educational and vocational opportunities of those who seek advice.

Vocational guidance machinery was governed by the 1963 Federal Vocational Training Act. This Act, now in the process of revision, includes the following provisions:

- The duty of vocational guidance services is to help minors and adults by means of general information and advice in particular cases, on all matters relating to the choice of career or studies, and on career planning.
- Vocational guidance is optional and free of charge.
- The cantons are responsible for vocational guidance machinery, and run central cantonal offices.

- The Confederation supports vocational guidance by means of grants and other measures. It contributes, in co-operation with cantons and the competent vocational associations, towards the initial and further training of counsellors.

2.2.1 Guidance means (as "information", see 2.1) preparation for the necessary maturity for choice of school or occupation, ie the free individual decision in the process of selection of school or career. This is done by methods that reveal aptitudes, tastes and scholastic and occupational opportunities. The principle of freedom in vocational guidance applies mainly in the German-speaking cantons. In the French-speaking cantons, which have introduced a "guidance level" ("cycle d'orientation") at the upper end of primary school, school guidance is institutionalised.

2.2.2 In the school selection system (particularly in German-speaking Switzerland), the results obtained, determined by marks, are used as criteria for the school career. There is a limited choice of optional branches.

2.2.3 Fifty per cent of school leavers apply for vocational guidance. No statistics have been drawn up for the whole of Switzerland on the decision in the choice of occupation at the end of compulsory school, so that no reply can be made to this question.

2.2.4.a In Switzerland, there is no institution that co-ordinates supply and demand in the system of training and employment. In practice, however, supply is adjusted to demand both by means of the supply of training and jobs, and by the situation as regards training and apprenticeship possibilities on the labour market. As a result of unemployment among the young (6.9% of all unemployed persons are now under 20, as opposed to 2% previously) there are plans for:

- improving statistics and information,
- taking steps to improve the supply of apprenticeship places,
- taking steps to avoid unemployment among young people unable to find apprenticeship places or having completed their apprenticeship.

- b. The cantons are responsible for vocational guidance machinery. They run central cantonal offices. The number of counsellors has increased from 392 in 1965 to 540 at the end of 1975. The number of applicants for vocational guidance has grown from 57,000 to 93,000 over the past 10 years. Adults are also increasingly applying for vocational guidance.

3.1.1 As a qualitative indicator, it is worth emphasising that any young person, regardless of his parents' financial situation, can receive basic training in an occupation. The vocational guidance system therefore has the full approval of the groups of people indicated under 3.1.1.

3.1.2 The training system is constantly developing and adapting to technical change.

3.2.1 No replies can be given to these questions.

3.2.2/3.2.2 At the present moment, a working party is conducting a survey into the improvement of mobility by means of further training courses. The findings of this survey are not yet available.

TRAINING OF SKILLED WORKERS IN THE UNITED KINGDOM

I. FOREWORD

Simplified explanation of the technical education system in the United Kingdom

The simplified flow diagram reproduced as Table 1 and the following notes should not be taken as a complete and accurate description. They should, however, enable readers to identify the places occupied in the system by the courses and organisations visited by working party representatives in November 1976.

Referring to the diagram it can be seen that at the age of 16 a number of choices are open to the student.

He may remain at school in the sixth form to study for the Advanced Level General Certificate of Education ("A level"). Subjects available are mainly of a general educational type but some subjects have quite a strong vocational slant. The Ordinary Level GCE is usually taken at school up to the age of 16 but some students who have not achieved the standards they wished for at Ordinary ("O") level may choose to continue "O" level studies in the sixth form also.

For the less academic pupil at school there are available courses leading to the Certificate of Secondary Education and these are normally expected to be taken at the age of 16.

A recent development is the City and Guilds "Foundation Course" which may be taken in the final year before leaving school at the age of 16, or during the same year as a "link" course operated jointly by school and College of Further Education. It could also be taken completely at a College of Further Education after the age of 16.

The 16 year-old school leaver may choose to enter a College of Further Education (FE) as a full-time student for one or two years. During this time he may study for "O" and/or "A" level GCE as an alternative to entering the sixth form at school. (Some local education authorities do not encourage "O" level studies at a College of FE). Full-time students at the College of FE may follow Ordinary National Diploma (OND) in a variety of vocational subjects. These courses are usually of 2 years duration and lead to standards roughly equivalent to "A" level GCE and may be used to gain entry to full-time Higher Education Courses at University, Polytechnic or College of Higher Education (CHE).

Students leaving school at the age of 18 with "A" level GCE may also enter University, Polytechnic or CHE courses. These include first degrees through a 3 year full-time course or a 4 year sandwich course. Sandwich courses include period spent in industry which may be arranged by the appropriate Industrial Training Board. Polytechnics and CHE's also provide Higher National Diploma (HND) courses usually of 3 years' duration and of sandwich pattern. These are at a level below a first degree and are regarded as for higher technicians.

Students of 16 to 18 years of age at Colleges of FE may enter for technician type courses being developed by the Technical Education Council and these new courses will eventually replace Ordinary National Diplomas and Ordinary National Certificates (mentioned later). Other full-time courses available at College of FE may include preparation for craft level occupations, but for certain craft occupations the normal route is through part-time study alongside full-time employment from the age of 16.

Part-time courses are provided in Colleges of FE, Colleges of HE and Polytechnics. In these the student is normally employed full-time and released (day or block-release) for part-time studies at the college. These studies cover mainly the operator, craft and technician levels, courses at technologist level being mainly full-time. Apprentices normally start employment at the age of 16 and their part-time education may cover from 3 to 5 years. Technicians may enter employment at the age of 18 and enter the educational programme at a higher point than the 16 year-old, sometimes requiring some bridging studies.

As shown in the flow diagram opportunities are available for transfer in both directions between the 2 full-time routes and the part-time route. For example, a student may take an "Ordinary National Certificate (ONC) technician type course as a part-time student and if he attains a sufficiently high standard he may transfer to a full-time course at University or Polytechnic. Thus a student may eventually reach technologist level with a good degree after first leaving school at 16 and spending 2 years in employment. At later stages transfers can be arranged to upgrade or downgrade students according to their performance.

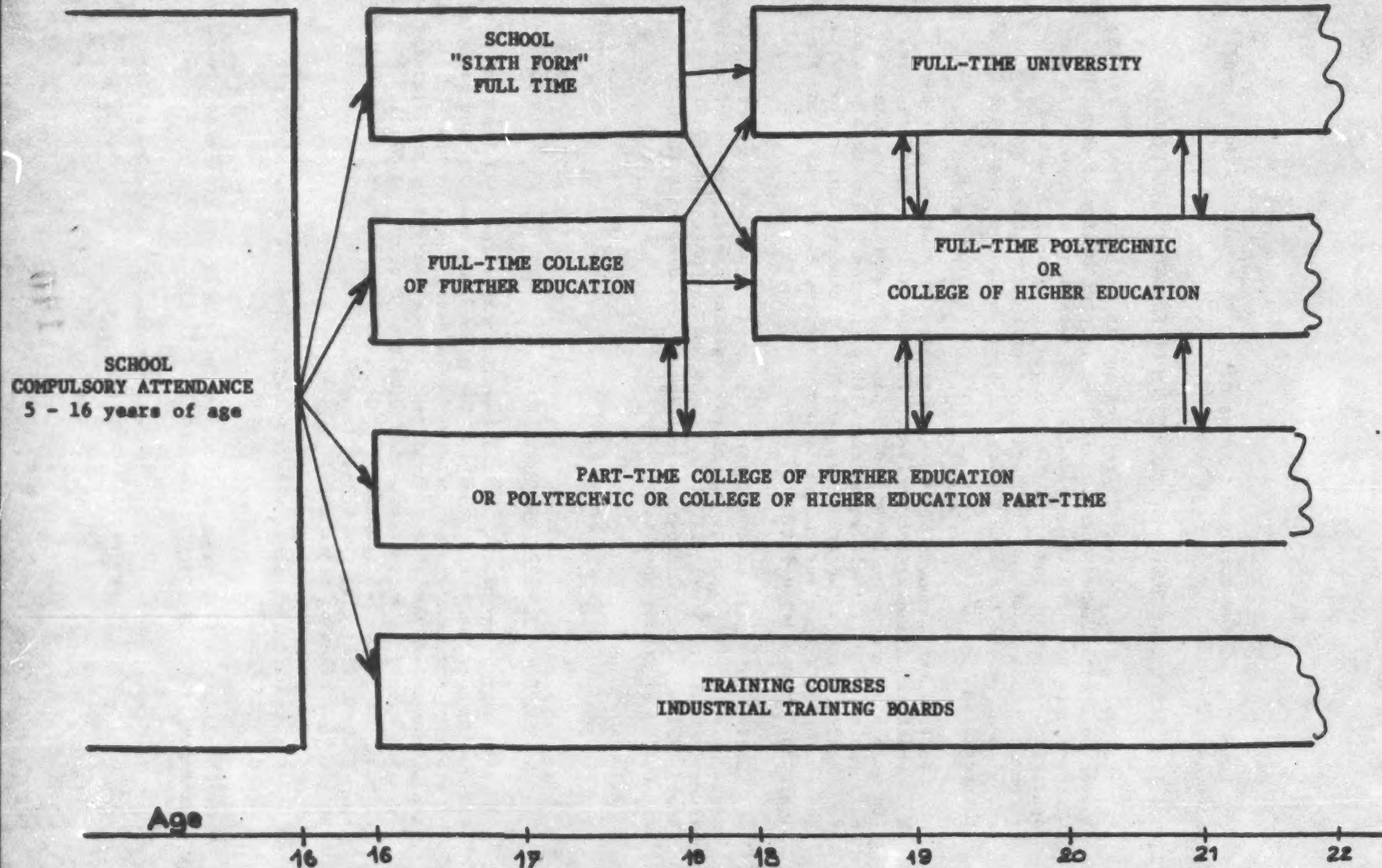
Students beyond the age of 18 in the part-time route may study for Higher National Certificates or the final stages of City and Guilds courses begun at the age of 16. (HNC's will also be replaced in time by the courses being developed by the Technician Education Council.)

A very wide range of courses is available to part-time students covering most industrial occupations. City and Guilds of London Institute examinations are the main targets for the craft and operator level students.

Industrial Training Boards issue recommended training programmes to their particular industries and these programmes usually require complementary further education, provided at colleges. Early stages of training may also be provided at colleges but most training, particularly at the more advanced stages is carried out by the industry itself. Industrial training covers the whole range of employment from operator to managerial levels.

Table 1

UNITED KINGDOM



II. DETAILED REPLIES

The numbering of the sections corresponds to that used in the Council of Europe questionnaire.

1.1 THE PRESENT SITUATION OF THE SYSTEM OF EDUCATION AND TRAINING

Following the Industrial Training Act in 1964, Industrial Training Boards were established charged with the responsibility of ensuring that adequate training is provided at all levels of employment in their specific branches of industry. Each board has a duty to make recommendations about the standard, content and length of training and also about the technical education that should be associated with the training.

In 1974, the Manpower Services Commission was set up under the Employment and Training Act of 1973. The Commission's chief task is "to help people choose, train and obtain self-fulfilling work and to help employers fill their vacancies with precision". For this purpose it operates through two agencies, each is a statutory corporation with its own chief executive: the Employment Services Agency (ESA) and the Training Services Agency (TSA).

During the visit to the United Kingdom the team had separate meetings with officers from two of the training boards, the Engineering Industry Training Board (EITB) and the Road Transport Industry Training Board (RTITB), the Training Services Agency and also with the City and Guilds of London Institute.

1.2.1 Grouping and concentration

The setting up of the central agencies under the 1973 Training Act was due in some measure to the need for closer co-operation and grouping of training organised on an industry by industry basis by the individual training boards. One of the first tasks to be tackled by the Training Services Agency is an investigation into the "Grouping of Skills". Although since the publication of this first discussion document opinions have changed a little, the agency is still actively seeking means to pursue the following objectives:

"To identify systematically the skills and knowledge which are needed to do jobs."

"Build up a data bank to identify the skills and knowledge thus contributing to improving occupational mobility by

1. enabling individuals to identify the skills and knowledge needed to perform any new job.

11. showing employers that vacancies can be filled from a wider population than they might anticipate,
- 11i. providing a basis from which to develop modular training programmes suited to the requirements of individuals and employers in specific circumstances."

For engineering craftsmen, the Engineering Industry Training Board (EITB) introduced in 1966, a scheme for off-the-job training for the first year of training, this being broad based to allow for later specialisation. In the second and subsequent years of training, modules were made available for training in particular skills as required by the individual trainee at his place of work. It is possible for a trainee to complete his first year off-the-job training and add 2 modules within a total time of about 3 years, after which he is regarded as a qualified craftsman, and may obtain a Certificate of Engineering Craftsmanship.

There are currently about 24,000 trainees undergoing first year off-the-job training. This training is provided mainly in training workshops in industry but large numbers are provided with training in Technical College workshops. A smaller number are trained in EITB training centres.

The changes that have recently been introduced into the first stage of the Broad Based Training Programme are worthy of more detailed study. It became evident that the pressures on trainees produced frustrations and resentments in many of them who, having arrived full of enthusiasm to learn the skills of a chosen craft, found they had to wait several weeks before encountering any of those skills. The details of these changes and the new pattern for the first 32 weeks of the training pattern are set out in the Appendix to this report.

In the vehicle trades, the training recommendations of the Road Transport Industry Training Board are based on an initial "General Stage I" followed by more specialised training in specific sectors of the trade. Details of the pattern of training are set out and explained in the Appendix to this report.

1.2.2 All-round training

All basic training schemes of the various Industry Training Boards include recommendations for "Technical Education" which are to be associated with the particular training scheme.

Technical education takes place in "Colleges of Further Education". It may be wholly integrated in a "basic integrated course of education and training", the ratio of education/training being approximately 40 : 60. It may take place in "block release" continuously or it may be on a "day release basis" where the apprentice attends a college for one or two days each week.

The content of the "technical education" includes technical knowledge relating to the particular industry and the type of training that the apprentice is undergoing together with the essential skills in mathematics and communication (which may involve graphics). Most college courses include periods which vary from as little as one hour per week to one half day per week on "general" subjects which in United Kingdom language involves outside visits, cultural activities, citizenship, etc.

1.2.3 Preparation for mobility

1.2.3.1 Horizontal (sectoral) mobility

The vocational training which follows first year basic training often consists of a number of vertical modules. Normally one module corresponds to a study year. However, another module may be added in order to broaden the real vocational training. The trainee may thus study a mechanics module as well as an electrician's module. In addition, the trainee may also be given an opportunity to work for short periods within other occupations, as a rule within the same vocational family. Even if the system thus offers to some extent a broad basic vocational education, this broad education base does not exist in all trades.

The four-year training within the auto/vehicle trade can however be mentioned as an example. It consists of a common basic year for auto electrician, partsman, light vehicle mechanic, heavy vehicle mechanic, commercial vehicle salesman and vehicle salesman. In the fourth year, further specialisations and studies within the vocational sector are offered.

The Engineering Training Board has defined performance standards for modules. These are known and accepted by all engineering firms using the system. Thus trainees who have a certificate of craftsmanship in two particular modules enjoy a qualification recognised by firms needing those particular skills. Thus a trainee has acquired a transferable skill and a degree of horizontal mobility within the engineering industry.

The common first year training for all craft trainees enables them to adopt their skills after they have completed their initial training in two modules. For example, a trainee can obtain modules in mechanical fitting skills and be certificated, following this he may then undertake mechanical maintenance modules as an adult and move into maintenance work. This enables adults horizontal mobility throughout their working life to satisfy both the changing skill requirement in the firm and the industry and wider opportunity for the individual's development.

Since the introduction of the EITB module system other training boards and organisations have adopted it for use in training engineering craftsmen in their industry. The board satisfies itself that the system is properly implemented and monitored in those other industries and issues both First Year and Craftsmanship Certificates to trainees who meet the appropriate standards.

Thus the EITB certificate provides a qualification which has currency in all the industries which employ engineering craftsmen. This provides the individual with a high degree of horizontal mobility outside the industry in which he was initially trained.

In addition to the vocational training, there are possibilities for broader education in the form of "general" studies. The examples of all-round training in section 1.2.2 points (b) to (g) in the questionnaire, are usually arranged by the employers during the four days of the week, when the trainee is training on the job. On the fifth day of the week the trainee studies at a college - both "general" subjects and subjects that fit into the usual pattern of the vocational training question. The real vocational connection in the college studies is dependent upon the qualifications and the experience of the teachers.

1.2.3.2 Vertical mobility (promotion)

Parallel to the three to four-year craftsman education is the four to five-year technician and technician engineer education, and the five-year professional engineer education. The minimum age requirement for admission to all these lines is 16 years.

The technician and the technician engineer training may take place in school or both in school and in industry in a sandwich system or in industry combined with part-time courses.

The five-year professional engineer education takes place both in school and in industry according to various programmes.

For admission to education for technician, technician engineer and professional engineer respectively, certain courses (subjects) are required above the generally no specific pre-entry qualifications required for craft studies courses. Direct admission at the age of 16 is thus dependent upon previous education. However, there are possibilities to join the technician/technician engineer education after finishing craftsman training. The craftsman can start from the second year in the first-mentioned line.

There are also facilities for the technician and the technician engineer to join the professional engineer education. They can start from the second year.

Statistical data for mobility within the system are not available.

In a survey undertaken by the Engineering Industry Training Board on the technician engineer and engineering technician population in the engineering industry, it emerged that 30% of the existing technicians had received their initial training as craftsmen.

The module system has, therefore, a bridging arrangement for trainees who can be upgraded from craft to technician training. It is likely that trainees making this change are already undertaking a course of further education at technician level and are capable of dealing with the more intellectual demands of technician work. The provision then enables vertical mobility to take place for trainees of suitable calibre.

Courses of education and training under the Training Opportunities Scheme (TOPS) developed by the Training Services Agency are available throughout the United Kingdom for the retraining of adults. In 1976, some 80,000 individuals were involved in courses each lasting up to a maximum of 12 months.

1.3 PRACTICAL ORGANISATION OF EDUCATION

1.3.1 Material organisation

The age of entry to basic schemes of training and associated technical education is normally 16+ but entry after an extra year of full-time education at 17+ is quite common.

The pattern of training depends on the recommendations of the particular training board, the wishes of the employer and the resources available within the company and/or at the local technical college. Some training boards have residential centres operated by the board's staff where individuals may be sent for specialist parts of their training.

The standards of equipment in workshops, whether in colleges or in company training shops, must be approved by the appropriate training board.

NOTE Details giving the arrangement of education and training for craftsmen, technicians, technician engineers and professional engineers are explained more fully in the first part of the Appendix to this report.

1.3.2 Organisation of teaching

Training methods and size of groups again depend on resources available and also on numbers coming forward for training. Several boards offer an "awards scheme" whereby individuals are sponsored and paid for by the training board when and where it is considered that employers are not recruiting apprentices in numbers that will be sufficient overall.

Please see "Conclusions" for further comments on this section.

The re-training of adults in the TOPS schemes may be carried out at a government "Skill Centre" or at a technical college. Courses are usually of 6 months' duration but can be longer. They can be of a mainly practical nature, such as welding, or may help to prepare for examinations held under further education arrangements, such as City and Guilds' Craft or Technician examinations.

1.3.3 Award of vocational qualification

Generally the individual industrial training boards monitor their own schemes of training, normally by means of a series of phase tests and continuous assessment. Certain boards are moving towards the introduction of specific skills measurement.

In all cases if an individual fails a particular test he is allowed to retake the test after suitable preparation.

Examination of performance in the technical education content of the course is the responsibility of the particular technical college, the examinations and/or assessments are normally monitored by the City and Guilds of London Institute or one of the regional technical examining bodies.

1.3.5 Teacher training

- a. In England there are four teacher training colleges which specialise in courses for the training of teachers for technical/vocational education. Between the four colleges most of the work carried out in Colleges of Further Education is covered. The courses are of one year's duration and are normally entered by persons of at least 26 years of age possessing appropriate technical qualifications and industrial experience.

The certificate awarded to students successfully completing the one-year course is accepted as equivalent to the certificate awarded by Colleges of Education (teacher training colleges) after a three-year course entered by students of age 18+, and gives full "qualified teacher" status.

- b. For serving teachers a variety of part-time training arrangements are available. A sandwich type course is mounted by the four technical teacher training colleges which require serving teachers to be released to the training colleges for one term followed by two terms back in their own colleges continuing their teaching practice and a final one term back at the training college. These sandwich courses lead to the same certificate as for the full-time one-year courses.

The City and Guilds of London Institute provides examinations for teachers who are unable to attend any of the four teacher training colleges but who are able to attend local courses on day-release arrangements. These courses are run in the teaching colleges themselves and one college may attract these part-time courses, which are usually of two years' duration (one day per week). Although they lead to a City and Guilds examination, they are not recognised as conferring fully qualified teacher status.

In-service teacher training is carried out by many colleges for the benefit of their own staff and in some cases one member of the teaching staff has responsibility for these in-service teacher training arrangements.

In recent years a lot of activity in curriculum development has involved many "untrained" teachers and has had beneficial effects.

2. THE INFORMATION SYSTEM

2.1 Knowledge of the employment situation (forecasting)

The Manpower Services Commission founded under the Employment Act of 1973 is also responsible for analysing the market position and for predicting long-term trends. The commission is aided by national agencies such as the Training Services Agency which get further support from the industrial training boards with their own research staff. The Department of Employment publishes annually estimates of people in employment, and this information together with further data derived from the censuses of population, is the main source of statistical information on the industrial and occupational distribution of young people.

Advisory committees were established in support of the industrial training boards' work whose members are representatives - both employees and employers - from industry. Education is also represented. All these groups are able to comment on their experience on the job, in school or college and may suggest modifications to the schemes in operation, such as the alteration of the curricula, the forming of combinations, the organisation of teaching and the actual form of examinations.

2.2 CHOICE OF SPECIALITY

In Great Britain there are institutions of careers teachers and of careers officers. Careers teachers are expected to give adequate information and guidance about the possibilities open to the pupils and some understanding of what life at work will be like. But a recent survey (1) by HM Inspectorate in England and Wales found that although 94% of a large sample of schools has at least one teacher assigned as careers teacher, in nearly half the schools the total time spent was equivalent to no more than 20% of one teacher's time. For the 14+ year, less than half the schools provided careers education for all pupils, and 28% did not provide it at all. In Scotland, careers education for pupils at all stages in the sixth year secondary course is provided by senior staff responsible for counselling in the personal curricula and vocational field. A specific time allocation is made for this work and teams of guidance staff have been appointed in accordance with recommendations published by the Scottish Education Department, in all secondary schools.

2.2.2 Method of guidance

There are no general criteria available for careers teaching. The Training Services Agency is actively trying to establish curricula which could be used nationwide. Furthermore, the Schools Council of England and Wales, the TUC (Trade Union Congress) and the CBI (Confederation of British Industry) are also developing relevant criteria.

a. Foundation courses

In recent years in response to requests from a number of schools and colleges the City and Guilds of London Institute has developed a new curriculum with a vocational orientation for young people in full-time education. It is a career foundation course intended as a one-year programme for young people of about average ability who may be in their fifth year of secondary education, be staying on at school for sixth form studies or may have elected to leave school for full-time education in a technical college. The content and learning objectives of each programme is based on a broad occupational group, which implies that the entrant must have had some guidance or shown at least a general interest in the occupational area, without having yet committed himself to specific jobs or to specialised technical education.

The aims of a "Foundation Course" may be summarised as follows:

1. To provide a broad educational base on which a more informed choice of career can be made;
2. To introduce the student to the disciplines of the working environment including health and safety requirements and to offer practical experience wherever possible.

(1) Careers Education in Secondary Schools. Department of Education and Science Survey, 18 HES0, 1973.

3. To provide an awareness of the functions of manufacturing, business and service industries at local, national and international levels, and of their implications for the individual.
4. To help the student become more aware of the social and industrial environment;
5. To provide an opportunity for the student to continue general education, and to improve literacy and numeracy skills;
6. To encourage the student's personal development and leisure activities;
7. To help the student reach a level of achievement which will facilitate progress into employment and to courses of further education.

The scheme is now in its third year of operation. There are 144 courses in operation, 13 of which are in schools and the remainder in technical colleges or in the form of "link" courses, is operated jointly by college and school.

There are approximately 1,000 students following foundation courses this year, the numbers for the two previous years being 500 and 600 respectively.

The City and Guilds of London Institute lays down guidelines and is preparing explanatory notes for issue to colleges and schools.

There is an approximately equal division between academic and vocational subjects but an integrated approach is recommended.

The situation is to be monitored to evaluate the effectiveness of the scheme but as yet it is too early to make a true appraisal.

Employers individually and the Confederation of British Industry (CBI) appear to be in favour. Some problems may arise with trade unions and with the Schools Council (which is developing other courses for students in the same age range).

b. Work experience

Another possibility to familiarise school leavers with life at work and to facilitate their job choice before they actually start working life are the "Work Experience Schemes". They give pupils the opportunity to gain insight into the life in industry, commerce, public service and other concerns as part of their general education. The aim is to give pupils a foretaste of conditions, demands and relationships of a working environment and to ease the transition from full-time education. Work experience schemes can also help to show the relevance of school subjects and may indirectly help in the choice of a job or career.

Progress in the development of work experience throughout the United Kingdom has varied. Because the responsibility for the promotion and approval of schemes is a local one, there are inevitably considerable variations in the amount, type and standard of work experience and very much will depend on the ability of individual schools to cope with the complex planning required and the capacity or willingness of employers to accept pupils.

Whilst it is generally agreed that "work experience" if properly organized can be a valuable activity for pupils in their last year of compulsory schooling, it is widely considered that young people are equally, if not more likely, to benefit from "work observation", involving a variety of visits of an exploratory nature, which can offer the pupil a wide view of work.

c. Careers service and guidance

In this connection the Careers Service, under the supervision of the Department of Employment, should also be mentioned. The major drawback of this scheme is, however, that it is not readily available in many cities, let alone in country towns, and thus the parents', friends' and relations' influence remains as dominant as in former days. Careers officers themselves regard their main objectives as guiding young people to understand their own abilities and potential and, on this basis, to make sensible career choices.

As a matter of fact, most school leavers regard the Careers Service as an intermediary for getting a convenient job rather than source of advice on their future careers. But the real emphasis on the placing role has diminished gradually as the guidance function has expanded and the service now places a smaller proportion of school leavers than it did in the early 1950s.

The school leaver is in no way forced to accept either the careers teacher's advice in school or the careers officer's guidance. These are solely of an advisory nature and do not have to be followed if the school leaver should decide that another job is more fitting for his abilities and potential. The Training Services Agency and the industrial training boards have developed programmes which provide a possibility for reorientation within the already adopted training. The Engineering Industrial Training Board's "Module System" is specifically designed to help trainees avoid a one-sided training and thus give them a better horizontal mobility. Apart from this there is also the possibility to acquire higher qualifications through complementary further studies in colleges and universities.

At present no statistical material is available on the number of trainees who keep up their careers after training or those who change to different sectors and other who select supplementary training. However, the institutions involved, especially the industrial training boards and the Training Services Agency, are very much interested in an evaluation of the effectiveness of their schemes.

2.2.3 Industrial recruitment

Following the cyclical nature of recruitment for long-term training in periods of economic recession, training places are not available to some young people who would get them in a better year. On the other hand there is often a considerable lack of skilled labour arising from the fact that the total needs of an industry may exceed the sum of the estimates made by the individual companies. Some industrial training boards already try to account for the requirements of their industry as a whole as well as of the individual firms and it can be assumed that industrial training boards will follow this line and try to mobilise the resources which are needed.

From time to time the Training Services Agency and industrial training boards have administered "Award" schemes in order to adjust training places to actual demands. These schemes have included financial inducements to employers to take on extra trainees and pay for their initial off-the-job training and associated further education. Towards the end of the initial training, efforts are made to place trainees with employers to complete their apprenticeships: those unplaced continue training under industrial training board sponsorship until they have found suitable employment.

3. THE RESULTS

3.1 Qualitative indicators

The activities of City and Guilds, Training Services Agency and industrial training boards are highly approved of by most parties concerned with the training of young people entering working life. This can be appreciated even more so when taking into consideration that out of 500,000 school leavers every year only about 135,000 become trainees and 300,000 receive little or no training from their employers. The remaining school leavers are trained between eight weeks and just over one year and are then considered as regular employees or workers in factories and offices. There is no doubt that those trainees who can benefit from the schemes of the above-mentioned institutions are better trained and more adaptable. However, it should be mentioned that the number of participants in those programmes is rather limited. In engineering (1), for example, some 20% of first-year craft and technician trainees are still not given off-the-job and module-training. In some other industries (construction for example) the proportion is much higher. Especially in some small firms the new methods are not welcomed. The success of the new methods should induce the training boards to continue their efforts.

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(1) Vocational Preparation for Young People - A Discussion Paper: Training Services Agency - Manpower Services Commission.

3.2 Quantitative indicators

As has already been explained, at present it is not possible to obtain reliable data on the results of the training schemes in relation to the mobility and adaptability of young people trained in such a way. The Manpower Services Commission was founded as late as 1974 so that the results of the Training Services Agency programmes will only become effective and noticeable within the years to come. The City and Guilds Foundation Courses were carried out for the first time in 1974. It is also not feasible to derive any quantitative indicators out of the results achieved so far.

Some of the industrial training boards started programmes in the mid-1960s which were aimed at improving the mobility of trainees. The results are very encouraging although accurate figures on a national basis are not available. However, it must be feared that sooner or later a point of development is reached beyond which it is difficult to progress as experience of industries like engineering and road transport has shown. The reasons for this seem often to be associated with the size of the firms that stand out against the change or with the specialist nature of their work. It is not likely that financial inducements will overcome this resistance. Nor does it seem right to use compulsion to make them change - the result would probably be that such firms would refuse to employ long-term trainees at all.

4. CONCLUSIONS

4.1 Concerning initial training: although the training has, to some extent, a broad base during the first year the specialisation towards the chosen trade starts already during this stage. It ought to be mentioned that experience has shown that the trainees seem to be relatively uninterested in other vocational trades than the one they have chosen.

4.2 Educational methods which give trainees opportunities to plan their own training programmes - choice of theoretical and practical parts of studies, when, and in what order various parts of the studies should be taken etc - seem necessary when trying to achieve real mobility in education. Initially conventional training schemes should gradually be transformed in "problem-centred" schemes. Such training seems desirable in order to train the individual actively to tackle problems and to progress making use of new study methods and opportunities in further education. No systematic effort seems to have been made to develop educational methods with this intent in mind.

4.3 The British system is characterised by a great number of variations and alternatives with complex routes for continued education and training. The Training Services Agency promotes schemes for the re-training of adult workers in which up to 100,000 people per year are expected to participate. Nevertheless, in our opinion, any continuance training - "lifelong education" in the real sense of the expression - has yet to be developed.

4.4 Training in Britain has undoubtedly received an important impulse by the Employment and Training Acts of 1964 and 1973. Young people who benefit from the training programmes thus initiated are given a sound basic training. By means of a wide range training system they are more adaptable to rapidly advancing technologies in trade and industry. However, it should be kept in mind that the number of young people participating in the improvements of such training schemes is relatively small when compared with the vast number of school leavers who receive little or no training at all. In this connection the question arises to what extent the British training system must make further advances to meet the requirements of a highly developed and constantly changing technology.

III. APPENDIX (1)

1. GENERAL CONSIDERATIONS ON THE ENGINEERING INDUSTRY TRAINING BOARD

The Engineering Industry Training Board was set up under the Industrial Training Act in 1964 "for the purpose of making better provision for the training of persons over the school-leaving age". Responsibility for training extends over the whole work force from the junior operator to the senior manager.

Over three million people are employed in the engineering industry as defined by the statutory instrument and includes the major sectors of aircraft and vehicle manufacture, electrical and electronic engineering and a wide range of mechanical engineering industries.

The Board sees its role as a catalyst for work with the industry and other organisations towards an effective preparation and deployment of people who work in engineering. Thus it is not the Board's job to do training but rather help others to help themselves and to effect this the Board looks at the problem from several points of view.

First from the overall position of the industry for which it must try and secure those aspects of training which are key to the industry. Here it is concerned with people whose skills are transferable from one company to another.

Second the Board serves the needs of individual companies in helping to identify, plan and make the most effective provision for the training necessary to achieve their corporate aims.

Third the Board must have regard to the aspirations of industrial people who work in the industry. This means ensuring the release of potential through the provision of proper opportunities and giving support for an appropriate balance of training and education.

2. EXAMINATION OF THREE LEVELS OF TRAINING

This paper is primarily concerned with the Board's role under the first objective which relates to transferable skills, although it clearly influences the way in which the third objective can be attained.

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- (1) The experts, in compiling this appendix, made use of several brochures published by the Engineering Industry Training Board.

Those having transferable skills are central to the success of the engineering industry and amount to about 28% of the total manpower. They are the craftsmen, technicians and technologists whose training is lengthy and costly and generally speaking can transfer their skills from one company to another. The training for these areas of transferable skills received early consideration by the Board and led to new patterns of training.

2.1 Craftsmen

The module system of craftsmen was introduced in 1969. (Reference to explanatory booklet - The Module System). Its major components are:

1. Broadly based first-year training in a range of engineering skills in an off-the-job training centre under the supervision of qualified instructors. On completion of the first year the trainee receives a Board certificate and can be registered for module training.
2. Modules are packages of skill defined by a skill and training specification which identify terminal performance standards achieved through a series of phase tests.
3. The modules can be selected from a wide range of skills to suit the individual's ability and the requirements of the job to be undertaken.
4. The Board monitors the systems which are controlled by the companies and on completion of two modules the trainee is awarded a Board certificate of craftsmanship.
5. Trainees are expected to undertake a matching course of further education usually from the 200 series courses of the City and Guilds Institute.

2.1.1 Implications for mobility

By defining performance standards for modules, these are known and accepted by all engineering firms using the system. Thus trainees who have a certificate of craftsmanship in two particular modules enjoy a qualification recognised by firms needing those particular skills.

Thus the trainee has acquired a transferable skill and a degree of horizontal mobility within the engineering industry.

The common first-year training for all craft trainees enables them to adopt their skills after they have completed their initial training in two modules. For example, a trainee can obtain modules in mechanical fitting skills and be certificated, following this he may then undertake mechanical maintenance modules as an adult and move into maintenance work. This enables adults horizontal mobility throughout their working life to satisfy both the changing skill requirements in the firm and the industry and wider opportunity for the individual's development.

An example of the additional module training for adult craftsmen is given in the Board's booklet "Dual Role Craftsmen".

In a survey undertaken by the Board on the technician engineer and engineering technician population in the engineering industry, it emerged that 30% of the existing technicians had received their initial training as craftsmen.

The module system has, therefore, a bridging arrangement for trainees who can be upgraded from craft to technician training. These arrangements are exemplified in the Board's booklet number 14 "The Training of Technicians". It is likely that trainees making this change are already undertaking a course of further education at technician level and are capable of dealing with the more intellectual demands of technician work. The provision then enables vertical mobility to take place for trainees of suitable calibre.

Since the introduction of the module system other training boards and organisations have adopted it for use in training engineering craftsmen in their industry. The Board satisfies itself that the system is properly implemented and monitored in these other industries and issues both First Year and Craftsmanship Certificates to trainees who meet the appropriate standards.

Thus the EITB certificate provides a qualification which has currency in all the industries which employ engineering craftsmen. This provides to the individual a high degree of horizontal mobility outside the industry in which he was initially trained.

2.2 Technician engineering and engineering technicians

The Board introduced systems of training for technician engineers from 1970 (reference booklet No. 9 "The Training of Technician Engineers") and engineering technicians in 1971 (reference booklet No. 14 "The Training of Technicians"). These recommendations were seen as complementary in meeting the training needs of the very wide range of jobs undertaken by technicians in engineering activities.

The problems of training contain three major elements common to both technician engineers and engineering technicians, the variation being in the breadth and depth of the programme which reflects the rather different needs of the two categories of occupations. The scheme contains:

1. A broadly based first-year training as an introduction to engineering skills and knowledge in an off-the-job training centre under qualified instructors. Although the training may take place in a centre dealing with craft trainees the programme should reflect the different needs of the technician; that is to acquire knowledge of the engineering techniques and methods rather than develop manipulative skills. At the end of the programme the trainee is issued with a Board First Year Certificate.

The trainee undertakes a complementary course of further education on a technical level course depending on his academic standard at entry.

2. The second phase entitled "General Training" includes:

- design appreciation,
- manufacturing practice,
- commercial matters,
- control techniques,
- communication.

Although the training is general in nature it should relate to the trainee's specialisation eg electrical and functional area or production, as well as recognising the individual's maturity.

The course of further education needs to be broad to cover the wider aspects of general training and this requires more time to be devoted to their education.

3. The third phase is the objective training and is aimed at preparing the trainees for a particular task, role or occupation. The programme should be related to a specific job and the Board's recommendation exemplifies this through job descriptions.

2.2.1 Implications for mobility

1. The first two stages of training are of a generalised nature and therefore provide a platform on which an individual can not only prepare for his initial appointment but enable him to move into other areas of technician work with a minimum of additional training. This clearly provides the individual horizontal mobility both within the firm providing the initial training and other firms in the industry.

2. The First Year Certificate does provide recognition of one part of the training which has currency throughout the engineering industry. At present the Board is considering a further stage of certification which might recognise the total training programme undertaken by a technician. Although it may not be feasible to define performance standards as closely as for craft trainees it means one could recognise a training standard for an occupation eg draughtsman.
3. The technician booklet accepts there may be entrants who are adults, where a specific training programme has to be designed to take into account the individual's previous training and experience. This does allow for horizontal or vertical mobility from a range of occupations.

As previously stated in paragraph 5 (3) bridging programmes can be provided for suitable craft trainees and this enables vertical mobility for that particular group.

2.3 Technologists

The Board has a particular interest in the training of professional engineers who make up two thirds of the employees covered by the title "technologists". The remaining third were scientists which includes mathematicians, physicists and metallurgists.

Recommendations concerning the training of professional engineers were published in 1968 (reference booklet No. 5 "The Training of Professional Engineers"). The objective was not only to provide for a pattern of training requirements of the Council of Engineering Institutions and their constituent bodies who define the standards required for a professional engineer to be officially recognised.

The training pattern described has a number of elements which need to be integrated with the education at graduate level being followed by the student engineer which may be of a "sandwich" course nature.

In planning a course the following should be included:

- induction,
- engineering practice,
- design appreciation,
- work organisation,
- objective training.

Apart from the last item it can be seen that there is a large section of the programme of a common basis, although in application of principles there will be variations for the various sectors of industry. Objective training will clearly relate to the specific task or role to be undertaken by the graduate engineer on completion of the training.

2.3.1 Implications from mobility

Because of the general nature of a significant part of the training an individual can move in a new organisation by having further stages of objective training. Clearly this allows for horizontal mobility of the individual between firms of similar products or services or with additional training to firms in a different sector of the engineering sector.

The Board has instituted a certification scheme for student engineers who complete a training programme to the recommendations with the quality of such training being monitored by Board staff. This will allow for recognition of the training across the industry in conjunction with the academic qualification and allow for easier horizontal mobility.

Once the graduate engineer has satisfied the standards of the professional institution and gained corporate membership this will provide a qualification which is acceptable in any industry.

There are situations where a trainee undertaking a technician education course, eg Ordinary or Higher National Diploma, may be transferred onto a degree level course. In this case the pattern of training whilst following the broad lines described above will also take into account the trainee's previous training and experience. This does provide some opportunity in vertical mobility for those trainees who start as technician engineers.

3. NOTE ON THE DEVELOPMENT OF A BROAD BASE STRUCTURE

A three-part training programme, consisting of induction to all skills, acquisition of basic skills and specialisation, has been followed in the Board's centres from their inception until the beginning of the 1972/73 course. During this period it had become evident that, whilst the inclusion of broad base training is of undoubted value, the justification of building this part of the training into the beginning of the course is questionable. A structure such as this produces considerable programming problems in that all trainees are required to spend an induction period in all skill areas within the first 12 to 14 weeks. This type of programming creates adverse pressures on trainees, producing frustrations and resentments in many of them.

A trainee arrives at the centre with an abundance of enthusiasm to learn the skills of his chosen craft, only to find in some cases he may have to wait up to 10 weeks before encountering the skills of that craft. Since few trainees fully appreciate the value of a broad base training programme at this stage, they tend to become unco-operative, which in turn reduces motivation and induces problems of discipline. It may also contribute to the higher fall-out rate at the beginning of the course.

Centres have often been criticised because the training programme is biased towards the mechanical trainee and his allied skills: indeed, the majority of centres are mechanically biased in terms of plant and staffing levels. A study of several centres clearly justified this criticism, as indicated by the following table:

TRAINEES' SPECIALISATION	SKILLS INVOLVEMENT - WEEKS		
	Mechanical	Electrical	Fabrication
Mechanical	37	4	7
Electrical	18	23	7
Fabrication	18	4	26

It has been argued that electrical and fabrication craftsmen are more likely to be involved in mechanical skills than mechanical craftsmen would be involved in electrical or fabrication skills. This may well be true, but it is not true to say that the mechanical engineering field covers a wider spectrum of work than fabrication or electrical fields. Therefore, it would appear that the balance of skill involvement ought to be such that it allows mechanical, technical or fabrication trainees the same opportunities to practise the skills of their chosen craft to the same depth, ie if a mechanical trainee spends 30 weeks completing mechanical work then electrical or fabrication trainees should be allowed to spend similar periods in their particular skill areas.

The type of work was modified so that a trainee involved in other skill areas would have tasks biased towards his chosen craft; hence, could be related to his chosen craft and motivate the trainee into completing them.

The broad base training programme was restructured to satisfy these conditions and yet involve the trainee in similar manual skills and knowledge requirements. The revised programme was introduced as a pilot scheme at the Leeds and Sheffield training centres at the beginning of the 1972/73 course. Compared with previous courses, results have shown a marked improvement of trainee motivation, performance rates, standards and discipline and the structure is now standard practice in the four EITB centres. Reaction and comments from employers, group training officers, company training officers and instructors have been very favourable since the trainee now receives a more broad-based introduction into the specialised skills of his future module work.

Table 1 compares the original and the revised structure against a common timescale of 48 weeks. A more specific outline of the four-part system is as follows:

SPECIFIC A

On joining the centre, each trainee undertakes broad based training in the elementary use of tools, machines and equipment applicable to his chosen craft. This takes maximum advantage of any initial enthusiasm for his chosen craft and, since the practising and teaching of any particular skill cannot be carried out in isolation to other skill areas, the trainee begins to appreciate the necessity for gaining knowledge and experience in other skill areas and is more willing to undertake the "general" broad based training.

GENERAL TRAINING

During this period the trainee participates in craft skills other than that of his chosen craft and is given the opportunity of acquiring an appreciation of these skills. The introduction of training specification and instructional objectives places the emphasis of training on the acquisition of basic principles and concepts, not on the acquisition of high levels of manual dexterity. It is far more important for the trainee to retain the concepts of a skill area than it is to retain manual dexterity: indeed the retention of manual dexterity is short-lived but can be re-established or improved upon at a later date provided there is a sound understanding of the concepts.

SPECIFIC B

This period is a continuation of broad base training but geared to the trainee's chosen craft wherever practical. Specific B is a flexible training period and allows a certain amount of flexibility in the course programme in that these skills need not be practised in the trainee's skill area. An electrical trainee is still involved in fitting skills, but the work is of the type he is likely to need in his chosen craft, such as setting-up and aligning of electrical motors and motor couplings, etc. This type of work should be carried out in electrical or fitting departments depending on plant and instructor availability.

Table 2

UNITED KINGDOM

Specialisation	Part C	48 -40	Part C	Specialisation
Broad based training geared to the trainee's chosen craft	Specific B	30	Part B	Acquisition of basic skills in all skill areas
Acquisition of basic skills in other skills	General	20		
Induction in trainee specialisation area	Specific A	10 0	Part A	Introduction in all skills
weeks				

Revised four tier structure

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Original three tier structure

DEVELOPMENT ON THE BROAD BASED STRUCTURE

SPECIALISATION TRAINING

This period of training is unchanged. The trainee is involved solely in the crafts of his choice and the work is biased towards the module he will take when he takes up full employment at his works. Specialisation work is devoted to project work in a simulated work environment.

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